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ON  
THE MONT DORE CURE

AND THE  
PROPER WAY TO USE IT,

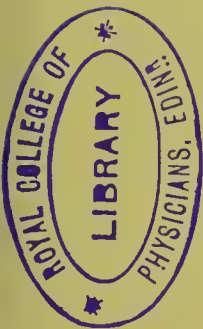
IN THE RHEUMATIC, GOUTY, SCROFULOUS, SYPHILITIC, TUBERCULOUS,  
DARTROUS, AND OTHER MORBID CONSTITUTIONAL STATES;  
ALSO IN ASTHMA, CONSUMPTION, BRONCHITIS, EMPHYSEMA,  
NASO-PULMONARY CATARRH, AND OTHER AFFECTIONS OF  
THE THROAT, CHEST, AND MUCOUS MEMBRANES.

BY

HORACE DOBELL, M.D.,

ETC., ETC.

CONSULTING PHYSICIAN TO THE ROYAL HOSPITAL FOR DISEASES OF THE CHEST,  
LATE SENIOR PHYSICIAN TO THE HOSPITAL, ETC., ETC.



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# TO MY MEDICAL CONFRÈRES

ABROAD AND AT HOME.

1881.



REGARDLESS of the distinctions of Friend or Foe, Creed, Race, Class or Nationality, it has ever been the ambition of the best Physicians and Surgeons to procure the greatest amount of good for the greatest number of their fellow creatures. And as it is the object of this work, for the public good, To PLACE IMPORTANT REMEDIAL POWERS, POSSESSED BY MEDICAL MEN ABROAD, IN THE HANDS OF THOSE AT HOME, I DEDICATE MY PAGES TO BOTH, as a slight token of personal regard and of confidence in their good fellowship and public spirit.

84, HARLEY STREET,  
LONDON.

STRETE PLACE,  
BOURNEMOUTH.





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# THE MONT DORE CURE AND THE PROPER WAY TO USE IT.

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## CHAPTER I.

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Responsibility accepted by the Author.—Importance of the Mont Dore Cure and of its being Rightly Used. — Cases must be thoroughly Investigated before Prescribing it.—Unfit Cases must be rigorously Rejected. — Fit Cases must be carefully Watched during Treatment.—Account by “An Old Resident” of the Selection of Bournemouth for the English Establishment.—Paper addressed to the Medical Profession at Bournemouth on the Nature of the Mont Dore Cure and the Reasons for Introducing it into this Country.—Accounts by Dr. Brockwell, Dr. Rabagliati, and a Writer in “Time.”

As I alone am responsible for introducing the so-called “Mont Dore Cure into this country, I feel that I am bound to accept the additional responsibility of teaching the proper way to use it, and of seeing that it is rightly carried out.

Very few medical men in this country have much experience in the systematic treatment of disease by baths, waters, diet and regimen; and, even abroad, there are few places where a really scientifically organised system of such treatment is understood; yet the drinking of mineral waters, the use of water and vapour douches, water and vapour baths, of different temperatures, aspirations and inhalations variously medicated, and systematic gymnastics, diet and regimen, comprise means of enormous value and power

for reaching and dealing with obstinate local and constitutional diseases.

Whether these powerful and valuable means shall be used for good or for harm will depend upon when and how they are employed.

It is of the utmost importance to know what cases are fit and what are unfit for so potent a system of treatment; and it is equally important that, when the treatment has been determined upon for what are judged to be suitable cases, it should be watched in its effects from day to day, so that this or that portion of it may be persisted in, modified, or discontinued, according as the symptoms of each case yield or otherwise to the means adopted, and according as the constitution of the patient bears it well or ill. It is of the greatest importance to adapt the treatment in all its parts to the vital powers and constitutional peculiarities of each patient.

I cannot too impressively urge, therefore, upon all those medical men who undertake to prescribe or to superintend the use of so important a system of medical treatment as that of Mont Dore, that they should first of all make a most searching examination into the constitutional condition and vital capacity of the patient, and into the condition of all the important organs and secretions of the body. "A beam is no stronger than its weakest part." This axiom is as valuable to the physician as to the engineer; and it should be his constant aim to find out which is this "weakest part" in his patient, not only in order to strengthen it, but in order that he may protect it from undue strain, and secure that it shall not give way under the stress of the activity of sounder parts.

The wise physician will always make it his first aim to

find out these "weaker parts," and having found them he will never lose sight of them during the management of his patient's case. They are often—I might almost say *most* often—the organs or functions which least attract the patient's notice, and are quite neglected by him in describing what he considers to be the important features of his complaint; so that he unintentionally leads his doctor far out of the track of the right scent, and is not unfrequently aggravated rather than otherwise when called upon to "try back," in recounting his case, and to enter into minute details of circumstances which he regards as trivial, but which to the astute physician may indicate the road to the secret of his cure.

Treatment such as that for which Mont Dore is famous is directed against both the local and the constitutional origins and results of diseases, and, in order properly to prescribe how it shall be followed out in each individual case with the best prospects of success, all these matters must be thoroughly investigated and considered first. There is no system of treatment that more especially calls for a knowledge of what I have described in another place as "The Germs and Vestiges of Disease," and the "Interdependence of Diseases," and the "Causes and Prevention of their Fatality," one example of which is worked out in the accompanying table. (See Table I, page 4.)

It is especially to the eradication of these germs and vestiges, between which there is so intricate an interdependence, that treatment like that of Mont Dore should be directed; and it is in proportion as it is wisely so directed that it proves really worthy of the name of a "Cure."

After long and mature consideration of the effects

## GERMS AND VESTIGES OF DISEASE.

TABLE I.—*Shewing the Interdependence of Winter Cough with other Diseases.\**

Diseases which act as causes of Naso-pulmonary Catarrh.	Diseases caused by Naso-pulmonary Catarrh.	Diseases and Conditions the fatality of which is increased by Winter Cough.	Effects of Winter Cough upon succeeding Generations.
Rheumatism { hereditary or acquired.	Bronchitis.	Typhus, Typhoid, Rheumatic, and other Fevers; Measles, Small Pox, Whooping Cough, and other Acute Diseases.	Hereditary pre-disposition to Catarrh, Bronchitis, Emphysema, Asthma.
Gout . . { hereditary or acquired.	Thickening of the walls of the air passages. Bronchiectasis.		Consumption, Scrofula, and other forms of Constitutional Debility, due to the deteriorated health of Parents.
Syphilis . { hereditary or acquired.	Emphysema. Heart Diseases.	Pregnancy, Parturition, Lactation.	
Scrofula . { hereditary or acquired.	Cerebral Diseases.	Cerebral Diseases.	
Winter Cough, { Catarrh, Bronchitis, Emphysema, Asthma } in ancestors.	Stomach Affections (Dyspepsia). Liver Diseases. Kidney Diseases. Dropsy.	Heart Diseases. All Internal Congestions.	
Rickets.	To these may be added—Hernia, which is frequently a consequence of violent coughing.	Hernia and other injuries.	
Measles.	Disintegration of Lung Tissue, or Catarrhal Consumption.	Surgical operations.	
Influenza.			
Whooping Cough.			
Heart Disease.			

\* See the Author's work "On Winter Cough, Catarrh, Bronchitis, Emphysema, Asthma," 3rd edition. Churchill, 1875.



which I have seen from the treatment of patients sent to Mont Dore, and of the *rationale* of the system there pursued, I determined to introduce it into this country for the benefit of those who cannot go to the Auvergne during the very short season in which "the cure" is possible in that region.

And, having decided that a combination of favourable conditions makes Bournemouth the most suitable—if not the only completely suitable—place for establishing the Mont Dore arrangements in this country, I circulated among my medical confrères at Bournemouth a paper setting forth my views on the subject, and asking them to give it their most serious consideration. At the same time I selected Bournemouth as the place for my own country house, so that, during my holidays from London, I should be able to assist my colleagues there in carrying out the Mont Dore Cure in the best possible way.

My project met with the warm approval of nearly every medical man to whom it was submitted; and it was, almost immediately, zealously taken up by a public company, the directors of which gave me their most emphatic assurance that if I would entrust them with my plans they should be carried out in the most complete manner, and as a guarantee of this they appointed my distinguished son-in-law, Professor C. Meymott Tidy, their "Consulting Sanitary Officer," and deputed him, at once, to make a special visit of inspection to the establishments at Mont Dore.

From the plans drawn up in consultation between Dr. Tidy and myself, the arrangements for the Mont Dore Cure at Bournemouth have been carried out in a most satisfactory manner by the architect to the new company, Mr. A. Bedborough.

The circumstances connected with the establishment of this company, and with its adoption of my plans, were related "by An Old Resident," in a local newspaper called "The Bournemouth Visitor's List," of November 20th, 1880, as follows:—

"A few eminent medical men in London conceived the idea of erecting, in a healthy locality on the south coast, an institution for the reception of invalids and others of the upper classes requiring change of air, or for visitors on pleasure, or residents who might desire to embrace the residential club system and free themselves from the cares of household management, etc. . . . After a most careful review of possible sites for such an establishment, they selected Bournemouth as the best, as this well-known health resort—'the town in a pine forest'—is equally adapted for residence both in summer and in winter. It possesses the further advantages of easy access from all parts of the kingdom, shelter from cold winds, a dry soil, and freedom from fogs and decaying vegetation. . . .

"Many eminent medical men had already expressed their approval of the design, and a medical council had been formed to assist the directors in carrying it out, when it was put before Dr. Horace Dobell, with the request that he would allow his name to be added to the list of those approving of the design and purpose of the intended institution [then called "the Glen Sanatorium"], and that he would receive a representative of the committee of management with the plans of the proposed building.

"It happened that, unknown to the projectors of this work [the Glen Sanatorium], Dr. Dobell had just addressed a paper to the medical profession at Bournemouth, which he had printed and privately circulated

among them for their consideration, entitled 'Bournemouth and the Mont Dore Cure, etc.,' in which he said, 'I propose to establish at Bournemouth an essentially similar system of treatment for winter cough, catarrh, bronchitis, emphysema, asthma, and other affections of the naso-pulmonary tract, and of the respiratory organs, and for rheumatism, to that known under the name of the "Mont Dore Cure."' . . . It occurred naturally to Dr. Dobell that in the proposed convalescent establishment at Bournemouth [The Glen Sanatorium], submitted for his approval and support . . . . a most favourable opportunity presented itself of carrying out his proposal . . . and he, therefore, without delay submitted it to the directors of the company . . . with permission to adopt his plans *on condition of their promising to carry them out in the most complete and conscientious manner.*

"Dr. Dobell agreed to join the 'Honorary Medical Council' of the company so that he might assist them in carrying out his plans; but, in accordance with a statement made at the end of his paper, he declined to have any *financial* connection with the Company or to accept any medical appointment, his advice being that the inmates of the institution should select their own medical advisers in the town of Bournemouth, just as they would do if they were in an ordinary lodging or hotel or private house; and this advice was adopted by the directors.

"The following extract from their subsequent prospectus expresses the result of the deliberations of the directors upon Dr. Dobell's propositions, and in adopting these, they decided [at Dr. Dobell's suggestion] to change the name of the new institution from that originally given, and to call it 'The Mont Dore.'

*“Extract from Prospectus.*—‘As an addition to the original scheme, Dr. Horace Dobell, who has since joined the Medical Council, has submitted to the directors a perfectly independent proposition, for the establishment at Bournemouth of a system of treatment . . . essentially similar to that known under the name of “The Mont Dore Cure.” The importance of this proposition, which is further explained in his pamphlet addressed to the Medical Profession at Bournemouth, is so great that the adoption of the system has been unanimously decided upon by the directors, and they have despatched an eminent expert to Mont Dore, who has obtained such information as will enable them to carry out the arrangements for “The Mont Dore Cure” in the most complete manner at *Bournemouth*.’ ”

*Extracts from the Paper addressed to the Medical Profession at Bournemouth, in August, 1880, referred to pp. 5 and 6, with footnotes added.*

“BOURNEMOUTH AND THE ‘MONT DORE CURE.’

“I propose to establish at Bournemouth an essentially similar system of treatment for winter cough, catarrh, bronchitis, emphysema, asthma, and other affections of the naso-pulmonary tract and of the respiratory organs, and for rheumatic affections, to that known under the name of the ‘Mont Dore Cure.’

“Every year larger and larger numbers of persons suffering from the above-named complaints resort to Mont Dore for the so-called ‘Cure’; \* and a careful consideration of the treatment adopted and of the results

\* The number of invalids visiting Mont Dore, which did not exceed 500 in 1855, has, during the last few seasons, reached nearly 6,000. “*Guides’ Diamant—Mont Dore*,” p. 126.



obtained, cannot fail to convince the physician experienced in these diseases of the reality and importance of the 'cures' in a very large number of cases—of cases, too, which had proved intractable to the other modes of treatment which had been previously adopted. One of the most unquestionable and pleasing features of these 'cures' is their permanence, at least in comparison with the effects of the various remedies from which the patients had previously sought relief.

"Two important and critical questions naturally and necessarily arise:—To which of the several factors in the 'cure' does it specially owe its potency? Are these special factors so inseparable from Mont Dore that they cannot be found or instituted elsewhere?

"These questions have engaged my most serious and careful attention, with the result of forcing upon me the conclusion that the special factors in the 'cure' are not in any way inseparable from Mont Dore, and that they may be effectually and successfully (more successfully I am disposed to think) carried out at Bournemouth.

"The factors concerned are as follows:—

"1. The special methods of using the baths and waters.

"2. The climatic and psychical influences of the place.

"3. The diet.

"4. The chemical composition of the waters.

"5. The physical condition of the waters.

"To begin with the last item (5); the only important physical peculiarity of the waters is the temperature at which they issue from the springs. The Source Bertrand or Madeleine, about 113° Fahr.; Source du Pavillon or Saint Jean, about 107° to 109°; Source César, about 113°; Source Caroline, about the same; Sources Ramond and Rigný about 109°.

“It was natural and inevitable that in early times the fact of a large volume of hot water ‘issuing from the bowels of the earth’ should greatly impress the human mind and attract persons to such springs, with the idea that some special virtue belonged to thermal waters, in consequence, not of their temperature *per se*, but of their temperature having been provided in such a striking and ‘Providential’ manner.

“But modern scientific education has banished this pleasant illusion, and shown that instead of there being any special miraculous power in a temperature due to sources acting ‘in the bowels of the earth,’ the same number of thermal units possess the same powers, from whatever source derived.\*

“Hence, although it is undoubtedly economical and convenient to have our bath water ready heated, there is no reason why it should not be just as good when heated by ourselves. As a matter of fact, *the waters for aspiration at Mont Dore are artificially heated.*

“‘Advancing backwards’ we come to No. 4, the che-

\* Even in 1823 Bertrand wrote, in reference to the popular notions on artificial and natural heating of water, that experiments had proved to him that, at equal densities, under the same conditions of atmospheric pressure and temperature, in vessels of which the nature, form, and capacity are equal, ordinary water and thermal water—the first raised to the same temperature as the second by artificial means—each loses exactly the same quantity of caloric in the same time. He says it is equally certain that it is not true, as stated in some books, that ordinary water and thermal water, all things being equal except that of their temperature, arrive at their boiling point equally quickly. The thermal water preserves its vantage ground, and always boils before the ordinary water. If then, he says, the caloric of thermal water differs from that of ordinary water artificially heated—which is far from having been proved—the thermometer certainly never tells us anything of the kind.

mical composition of the waters. To this, of course, it would be natural to attach great importance, if the main features of the Mont Dore treatment consisted in the internal use of the waters, or, if the analysis of the waters showed them to be peculiarly powerful in any therapeutic direction, or, if the cases treated belonged to only one class. But great doubt is thrown upon this point when we examine the facts of the case—which are simply these—that the cases treated are of various classes; that it is not usual to allow more than a quart of the water to be drunk per day; that the course of treatment only lasts from fifteen to twenty-one days; that on examining the analyses of the strongest of the waters, we find (supposing a quart to be drunk per day for fifteen days) that the total weight of mineral ingredients of all kinds consumed does not exceed 371 grains (370·50), principally consisting of salts of soda, magnesia and lime; that out of this quantity the arseniate of soda, for which, alone, the water is specially famous, could not amount to more than *one grain and one-third of a grain* (1·365) in the fifteen days.\*

“However, this point is not of very special import to our present purpose, because the waters ‘are easily transported without suffering any alteration’ (Emond), and can be obtained and drunk in other places than at Mont Dore. They only require to be warmed.†

\* These quantities are the result of a special analysis of the Madeleine water, made by Professor C. Meymott Tidy in 1880. (See Table II.)

† With regard to transporting the water, M. Boudant says:—“We must not forget the important recommendation to heat the water in a water-bath before drinking it: this is the best way to revive the physical properties and chemical reactions. With the aid of this precaution, exported water drunk at home produces

"3. The Diet.—There is nothing peculiar in the dietary at Mont Dore. It is on the whole less attended to than at most continental watering places, and rather errs on the side of 'over-sumptuousness.' This, at least, was the opinion of Dr. Boudant, after twenty years' experience in the Auvergne. He recommended a moderate diet of meat, vegetables, and fruit.

"2. Climatic and Psychical Influences.—The Mont Dore country is mountainous and lovely, and the '*air perfumed with the scent of fir woods*;' so that both mind and body are favourably influenced by the country. If the residence were one of months instead of days, one might expect some effect from the altitude of the place, especially in phthisical cases; but, as we have seen, the treatment is limited to from 15 to 21 days, and, therefore, no more than a most transient therapeutical influence could be due to the elevation; and as the cases benefited at Mont Dore are very various—extending through the whole range of rheumatic, catarrhal, asthmatic, and phthisical affections—the influence of elevation above sea level, although beneficial to some, would certainly disagree with others.

"No one will doubt the psychical effect of lovely scenery and retirement from the ordinary rush and bustle of the world; but these influences are in no way restricted to the Auvergne. And, up to the present time, the large majority of the visitors at Mont Dore have been French, who are not peculiar for their admiration of scenery or of country life, and are to be found

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effects as remarkable and advantageous as when drunk at its source . . . . The water of the Madeleine Spring, when bottled, keeps perfectly for many years."



more often at the hotel tables than up the mountains. On the other hand, there is no doubt that the climatic peculiarities of Mont Dore are rather a difficulty in the "cure" than otherwise; the season\* of *possible fine weather* is a very short one; the cold winds from the hills in the mornings and evenings are very dangerous; and those who arrive late in the season are very apt to encounter bad weather.†

"There can be no question that in the above respects Bournemouth, with its *sea-air* 'perfumed with the scent

\* SEASON.—"The months of *July and August* afford the most favourable time for following the course of treatment enjoined at Mont Dore. The months of June and September have a mean temperature of 57° F., the weather is more variable, but one may hope, especially in September, for a few fine days at intervals with *occasionally a week of fog or of rain*. Nevertheless, it is possible that June and September may be very pleasant. Winter sets in early. . . . The snow which falls towards the end of October remains till the middle of April before it thaws. The temperature of May is very unequal." (Emond.)

† CLOTHING, ETC., FOR THE CLIMATE.—"An important recommendation, especially for patients on arriving at Mont Dore, is to secure a room with a fireplace, and to buy woollen clothing in case of need, as storms are frequent, the temperature variable." (Boudant.)

M. Bertrand does not think that either the climate or the treatment at Mont Dore, as a rule, favours hæmoptysis, but *that the hilly character* of the country requires caution; thus he says that those suffering from diseases of the chest ought to avoid ascending the hills, as he has seen patients spit blood at the end of such fatiguing walks, in consequence of the distressed breathing and accelerated circulation thus produced. Again, he says that patients who are naturally sensitive to the evil effects of transitions of temperature ought to guard themselves against them with still more care than usual. "Those who go to Mont Dore would be very wrong if they did not bring with them their warm clothing." (Bertrand.)

of fir-woods,\* would have a decided advantage over Mont Dore; and, from its accessibility at all seasons of the year, numbers of persons who are denied the advantages of the Auvergne treatment would be able to enjoy them at Bournemouth.

"I have found, during a large experience, that, from one circumstance or another, not more than 5 per cent. of the patients for whom one wishes to prescribe the Mont Dore treatment are willing or able to go to the Auvergne during the very short season allowed for the 'cure.'

"We come last to the item which I have placed first on the list, and to which we must accord the first importance.

"I do not think that any physician of large experience, taking into unprejudiced and careful consideration all the circumstances of the various items of 'the Mont Dore Cure,' can arrive at any other conclusion than that it owes its potency almost entirely to the *methods of using the baths and waters*,† and that, with the advantages of

\* EXERCISE AND PINE WOOD PROMENADES.—"We urge upon the patients to be discreet with regard to long and fatiguing walks. They ought in preference to *seek the pine-woods*, and to rest long under their shade, in order to breathe the balsamic emanations which they give off. These journeys should be made on foot or in a wheel chair; the less invalided may ride gently on horseback or in carriages if the journey is long and the roads suitable." (Boudant.)

"The balsamic odours of the fir-trees have a most healthy influence, and are a powerful aid in the cure." (Emond.)

† THE MONT DORE SYSTEM.—"A medication in which we see predominate in a striking manner the employment of *humid heat*. We are confirmed in the correctness of this point of view by (the statements of) Bertrand, who undoubtedly created this medication, and made it what it is." ("Dictionnaire Général des Eaux Minérales," 1860.)

sea water for the baths and aspirations when desired,\* in addition to the Mont Dore waters, the treatment might be carried out more successfully at Bournemouth than at Mont Dore.

"I wish, therefore, to call particular attention to the details of the *system which I propose to introduce at Bournemouth*. For this purpose I will here quote the letter of a well-known and most sagacious physician, who visited the Auvergne last year by my advice, after having tried almost every other means of cure which medicines and climate could afford.

" ' July 10th, 1880.

" ' DEAR DR. DOBELL,

" ' I have much pleasure in forwarding the enclosed account of my experience and opinion about Mont Dore, which I trust will give you the information you desire; if not, and I can add thereto, I shall have much pleasure in giving you any further details. I cannot allow this opportunity to pass without thanking you

"The varied modes in which the waters are used powerfully contribute to their salutary effects." (Boudant.)

"Since the new arrangement of the establishment, the waters are used under the most varied forms:—1, drinking; 2, baths; 3, half-baths; 4, inhalations; 5, pulverisation; 6, gargles; 7, footbaths; 8, water-douche; 9, vapour-douche; 10, ascending douche; throat irrigation; nasal irrigation; &c." (Boudant.)

"I cannot help thinking, however, after allowance has been made for all arguments of this kind (chemical, psychical, and climatic) that part of the secret of the cure, I mean in rheumatic cases, *is due to the form of the application, as much as to its nature; while in chest affections I am sure this is so.*" (Dr. Rabagliati, "Brit. Med. Journal," July 10, 1880.)

\* To which arseniate of soda or any other medication could be added when thought advisable.

very sincerely for your kind and valuable advice, for which I feel most grateful, and especially for the course of treatment you put me through previous to my visit to Mont Dore, which I have no doubt aided me most materially.

“It was about the middle of August, 1879, that I left Royat, where I had been staying with my wife and daughters about a fortnight, for Mont Dore, at which place we arrived after a pleasant drive of six hours in a comfortable sociable landau, through charming scenery and in glorious weather. We took up our quarters at the Hotel —, where after two or three days, we secured comfortable but somewhat primitive quarters in the Chalet department, facing the Park, where the Band plays daily at three o’clock, and where the promenaders muster.

“Retiring early to a clean and comfortable bed, I slept—for an advanced asthmatic—fairly well. About six o’clock the next morning I sallied forth with my kind friend and medical adviser, *Dr. Emond*, for a tumblerful of the *Madeleine* spring and to the Aspiration chambers. Aseending three easy flights of stairs, I exhibited my ‘pass,’ which had been generously presented to me, when I was ushered into a chamber, where I divested myself of a shawl I carried with me, my overcoat, vest, and shoes, which were pigeon-holed, when I was supplied with a towel and sabots. I then, duly prepared, passed through a door into a chamber filled with steam, thence to another less heated, where, with others, I seated myself, when I shortly began to perspire, in which chamber I remained *half-an-hour*. I then walked into a larger chamber at a higher temperature and still more densely saturated with steam, where were numerous suf-



ferers, chiefly Frenchmen, in various costumes, sometimes walking around and at other times sitting upon wooden chairs; some of the more enthusiastic, doubtless anxious to expedite their *cure*, stood from time to time over the seething steam cauldrons, making forced inspirations, *a practice against which I was warned*. Here I remained about a quarter of an hour, during which I perspired most freely, leading to frequent swabbing of the face and chest with the towel supplied.

“I then returned to the antechamber or robing room, gave up my towel, put on my vest and coat, was enveloped by an attendant with my shawl, and passed out, where two porters with a sedan chair awaited me, who first took me for another tumblerful of the spring, and then deposited me at the foot of the stairs of my hotel, where a woman preceded me with a warming-pan, with which she warmed my bed and flannel shirt. Divesting myself of my bath clothes, which were freely bedewed with perspiration, I put on my flannel night shirt and turned into bed for about two hours, and after a comfortable snooze, I washed, dressed, and went down to a sumptuous *déjeuner à la fourchette*. That finished, the assembled inmates adjourned to the Square to bargain for horses, carriages, etc., for rides or drives in the surrounding country, which abounds in scenic attractions, and where, upon the surrounding heights, you can inhale the pure and bracing mountain air.

“About the fifth morning my kind physician came to my hotel about six o'clock, and took me to another wing of the establishment, where I entered a somewhat dreary chamber, and was ordered to strip and to get into a bath. Did you ever get *into a bath at 112° Fahr.* (the



natural temperature of the water)? If so, I venture to assume that you jumped out more quickly than you got in, at least I did, much to the amusement of my friend and of the bath-man, who pronounced me an "agile Asthmatique"! I was now requested to enter "lentement," which I did, and then to sit upon a stool, which rapidly, and much to my astonishment, descended to the bottom of the bath, covering me up to the ribs; again I speedily ascended, and it used to take me about four minutes before I could get to an anchor. Then a board was placed across the bath and before me, upon which I rested my arms, when for twelve minutes I sweated to a degree more easily imagined than expressed. The time up, in came the bathman with a felt bag, containing a large linen sheet and two towels, so hot that I writhed upon their application. Dried and dressed, I proceeded to the *Aspiration chambers* on foot, repeating the process as already described.

"At the end of a fortnight, when I left, I had so much benefited, and I had learnt about so many who had been permanently cured, that I have resolved to repeat my visits again and again and I should strongly advise all those suffering from bronchitic asthma to do likewise.

"For a considerable period after my return to England I had but slight traces of the affection (hereditary), from which I have suffered about fifteen years, and I am now no longer agonized by those prolonged attacks of dry suffocative catarrh,—expectoration speedily following upon any cold caught, with marked relief. The wash-leather jacket with arms, which you ordered me, I have found a great protection against the great and sudden changes in this variable climate.'

“The exact details of the treatment as given in the foregoing letter are of course *subject to modification according to the particular case*. A French physician of large experience in chest diseases was with me the other day, who attributes his own complete recovery from the effects of very serious attacks of hæmoptysis with lung consolidation, to a course of treatment at Mont Dore. In his case the plan pursued was not quite the same as that given in the letter. Then, again, in affections of the tonsils, pharynx, Eustachian tubes, in post-nasal catarrh, ozæna, etc., which are largely treated at Mont Dore, the use of the various kinds of douches and sprays is the special feature in the treatment.

“But, on the whole, the graphic sketch given in the letter I have quoted, sufficiently describes the general scheme of the Mont Dore treatment. It will be seen that in order properly to carry it out, A VERY COMPLETE SYSTEM AND SERIES OF BATHS AND ASPIRATION ROOMS, IN CLOSE PROXIMITY TO SLEEPING AND REFRESHMENT ROOMS IS ABSOLUTELY REQUISITE.\*

“There must be a series of properly furnished baths and douches, sufficiently numerous to allow a number of patients to use them at the same hour. There must be a suite of aspiration rooms, at different temperatures fitted with all the different forms of douche and spray. There must be adequate and suitable hotel accommodation, in close proximity to the baths, and a staff of thoroughly qualified bath attendants must be always in waiting. The whole of these arrangements must

\* In erecting a special building for the purpose, the defects which exist in the Mont Dore arrangements may be corrected, and provision may be made for pine baths and for antiseptic and other medicated aspirations.

be carried out *twice over*, one set for men and one for women.

“The neglect of any part of this plan would spoil the whole. Medical men and patients who have been accustomed to Mont Dore, must find the plan as completely carried out at Bournemouth as in the Auvergne, and thus be able to recommend it to their friends.

“Great skill and judgment is shown by the Mont Dore physicians in the selection of cases for this or that modification of the treatment, and in the rejection of those for whom it is unsuited. It must never be forgotten that it is a *very definite and potent course of emphatically medical treatment*, and will require the same skill and judgment on the part of the medical advisers at Bournemouth as is exercised at Mont Dore; otherwise it will not have the same success.

“Feeling strongly convinced of the importance of the treatment, and of the special advantages which Bournemouth possesses, as *the place, par excellence*, where it should be established in this country,\* I am particularly

\* The following letter by Dr. Brockwell, of Norwood, was by his permission published in the *Bournemouth Observer*, November 17, 1880:—

“THE MONT DORE, AT BOURNEMOUTH.

“DEAR DR. DOBELL,—As you may possibly remember, I, at your suggestion, accompanied one of my patients to Mont Dore, Auvergne, this summer, and as I have not had an opportunity of talking over the treatment with you since, I have thought perhaps a letter from myself might be of interest to you, in connection with the proposed ‘Bournemouth Mont Dore’; for I most cordially agree with you as to the great advantages that would undoubtedly be derived from such an institution. I went through a short course of the Mont Dore treatment myself, trying the various baths, aspiration chambers, &c., while watching my patient. My patient was suffering from neurotic asthma, with some plugging

anxious that it should be done thoroughly and well. I have, therefore, drawn up this sketch of my views, for the purpose of submitting them to the careful consideration of my medical brethren at Bournemouth, with whom I shall be most happy to co-operate in the matter; and, as it is my intention for the future to spend a certain portion of my time among them, I shall hope to be able to assist them in carrying out these valuable additions to the remedial attractions of the place.

“\*.\* To avoid misapprehension I may add that, in accordance with my invariable rule in reference to *all*

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on the right side. He benefited considerably from the treatment, . . . and I found the right lung greatly cleared on his return. . . . I had considerable conversation with the medical officer. . . . I am thoroughly satisfied with the great value of the Mont Dore treatment. That a considerable proportion of pulmonary affections—as bronchitis, asthma, bronchial catarrh, &c.—are cured, and a very large proportion materially relieved, is undoubtedly capable of proof. The treatment is by no means disagreeable, and occupies but a very small portion of the day—about an hour and a half in the morning. One feels so comfortable on rising from the short sleep taken after the morning’s treatment, and, indeed, so refreshed. . . .

“I found nothing in the treatment that could not be as well carried out at Bournemouth as at Mont Dore. I think that there can be no doubt that the great element of success is in the baths and their mode of administration. Any value that may belong to the constitution of the Mont Dore waters could be secured by medicating the waters used for aspiration, and by bringing over the Mont Dore waters for drinking. While the great difficulty and expense of reaching Mont Dore place it beyond the reach of any but the wealthy, its limited season of three months lessens very much its value. The easy accessibility of Bournemouth, its charming air, pine-woods, and sandy soil seem to render it in every way a most desirable site for the proposed scheme, and I thoroughly believe such an institution as you propose would be of very great value to the British public.—I am, etc., yours, J. BROCKWELL.”



*remedies and means of medical treatment*, nothing will induce me to have any *pecuniary interest* in the commercial part of the above plans. These must be left "to those whom they may concern."

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In further illustration of the Mont Dore arrangements of the present day, I may quote the following extracts from a sketch of the watering-places of the Auvergne in the "British Medical Journal," of July 10th, 1880, by Dr. A. Rabagliati (M.A., M.D., Honorary Surgeon to the Bradford Infirmary), written after a visit to the Auvergne :—

" . . . Sojourners at the Mont Dore are apt to suffer from the cold winds which come down from the hills in the mornings and evenings, and which form a source of danger not by any means to be overlooked by those who go there suffering from chest affections. Notwithstanding this drawback, the place is generally very hot in the summer months, and the temperature is said to average 63° Fahr. in July and August. My experience was less favourable, owing to the cold and wet which prevailed all last year, and very often we had to shut ourselves up in the hotel and sit round the wood fire in the salon, just as in cold weather in England, or to use a *chauffrette* or foot-warmer in our bed-rooms. . . . It is for its power over phthisis and bronchitis that the Mont Dore is chiefly famous. I propose, therefore, to describe, in its practical and theoretical aspects, the treatment to which sufferers from these disorders are subjected. . . .

" Much discussion has taken place as to what is the active principle or principles of these waters. Jules Lefort and the authors of the '*Dictionary of Mineral*



*Waters'* placed them amongst the mixed bicarbonated and ferruginous waters; Michel Bertrand among the slightly alkaline; but since his time most physicians tend to consider them as specially arsenical. Let us recall to mind the effects of arsenic. It seems to exert a moderating influence on the respiratory combustion. The Styrian peasants are said, on good authority, to use it for strengthening their wind. It seems to calm the thoracic movements, and renders easier the accomplishment of respiration, the necessity for which is not felt to so great a degree as usual. All these effects are experienced after a time by the Mont Dore bathers; and no doubt some of the effects are to be attributed to the fifteen-one-thousandths of a grain of arseniate of soda contained in every *litre* of the water (see Table II.), though, as I hope to point out immediately, I do not think that this is the sole agent in the treatment. The treatment generally lasts for three weeks, and consists of hot baths, hot douches, drinking the water, hot foot-baths, and subjecting the body after the bath and douche to a longer or shorter period of exposure to the vapour of steam in the '*salle d'aspiration*,' *obtained by boiling the same water*.

"Let us follow out the course as the bather is recommended to take it. Owing to the large and increasing numbers of those who come to take the waters, it is generally the fate of new comers to be compelled to rise at 3 a.m. for their baths. In the first place, they go, or are carried in sedan chairs, to the spring, where they drink a glass of the water. Then they go to the bath-rooms, which are in the same building, where they have a hot bath (from 90° to 113° Fahr.) for ten, twenty, thirty minutes, or even longer. [See Table II.] This

is very comforting, the water feeling at first sometimes just a little too hot, and causing also, sometimes, a sensation of dyspnœa; but this immediately passes off, and the patient surrenders himself to the enjoyment of the bath. The little bath-rooms are furnished with bells, by means of which an attendant can be summoned in case of necessity; otherwise the attendant returns at the appointed time, at the end of the bath, to remove the patient's clothes, to prevent their getting wet, and to turn on the hot douche. The water comes from this either in one stream about the thickness of the little finger, or through a rose. In either case, the force with which it descends is very considerable when turned fully on; but it can be regulated by means of a tap. The douche lasts for ten or fifteen minutes, and to most patients is very refreshing, though, if continued longer, it becomes fatiguing, and seems to induce rheumatic pains. The douche over, the patient is immediately wrapped in a hot linen dressing-gown, and the feet rolled in hot towels and thus dried. There is no rubbing of any consequence, only sufficient to dry one. Some patients are recommended to take only the bath; others to take only the douche; while others, again, sit in a half-bath, covering the lower limbs only, while the douche is administered. Instead of this bath and douche, the foot-bath alone may be given; the patient sitting with the feet immersed in hot water for half-an-hour or longer, as the case may be.

“After this, patients are carried to the *établissement des vapeurs* across the square, for the purpose of inhaling the steam. For this, it is necessary to dress in a loose costume of thick flannel made for the purpose, as all garments become speedily saturated with the vapour. Wooden sabots are also recommended and invariably

worn by the bathers, to keep the feet from the wet stone floors. The *salles d'aspiration* are three rooms about eighteen feet by thirty-six feet, which are filled with steam constantly rising from the mineral water through two funnels in each floor. Theoretically, the three rooms ought to be kept at temperatures of 73°, 77°, and 88° Fahr.; but practically, especially as the morning advances, and the steam more and more fills the rooms, they are somewhat hotter than this. Here patients are recommended to stay from twenty minutes to an hour, inhaling the steamy vapour from the mineral waters. They walk about, or sit on chairs provided for them, presenting a grotesque and ghostly appearance, as the outlines of the peculiar garments are dimly seen by candlelight through the thick mass of vapour that fills the rooms. It is impossible to recognise anyone at more than a yard's distance. The immediate effect of the inhalation is generally to produce free perspiration, for which the previous hot bath and douche are a good preparation.

“After this, patients, warmly covered with great-coats or eloaks, are carried back to the *source* for another glass of water, and thence to their hotel, where they immediately return to beds thoroughly heated by warming-pans; and, after a cup of hot coffee, try to sleep for an hour or two, according to the time at which they have been previously roused for the treatment. The hour for *déjeuner* being 10.30, this arrangement is a convenient one, and many patients prefer to remain in bed until this time, although the doctors do not order more than an hour's stay in bed. It is evident, in the absence of any cold application after the hot bath, that some such arrangement as this is necessary, in order

to allow the subcutaneous muscular fibre to recover its tone, and, by closing the pores, to prevent persons from taking cold. Accordingly, the medical men lay great stress upon this adjunct to the treatment; and it is a curious fact that the most delicate persons, exceedingly susceptible to cold at home, seem never to take cold under this *régime*. Not only so; it seems to enable them to bear the outside cold much better for the rest of the day, much in the same way, probably, as persons who have returned to England after residence in a hot climate feel the cold of the first winter much less than they do subsequent ones, or than they expected. . . .

“ In addition to chest-affections in general, great attention has been paid to the treatment of diseases of the mucous membrane of the nose, pharynx, and Eustachian tubes. The little instruments for the administration of the naso-pharyngeal douche are well worthy of notice, affording as they do a far more effective means than the ordinary syringe supplies of douching the whole naso-pharyngeal tract. The instruments are very simple, and consist of a bone, or ivory, or amber nose-piece, which is inserted into either nostril, the open end being directed slightly upwards as well as backwards. The douche is let on or off by means of a small valve worked by the thumb, and the flow of water is obtained by hydraulic pressure in the ordinary way. The tap either allows or stops the flow at will; and the arrangement is such as could easily be adapted to being worked by an india-rubber syringe, failing the proper disposition of cisterns containing the mineral water, such as exists at the Mont Dore. On being directed into the nostril upwards and backwards as described, the mineral water impinges obliquely upon the upper part of the posterior wall, and is thus



driven gently into the opposite nostril, through the open mouth of which it thus escapes. After a little practice, therefore, the patient can irrigate the whole of the nasal and upper part of the pharyngeal mucous membrane by a stream of mineral water inserted into one nostril, and emerging, after having performed the circuit, from the other. I saw patients so acting on themselves, and, after a few seconds' trial, was able to manage it for myself. How useful such a method must be for treating all thickenings of this part of the mucous membrane, ozænas, chronic inflammation of the Eustachian tubes, etc., may easily be imagined.

"Another point to which attention has been given at the Mont Dore (and which, as well as all the other arrangements, I was able thoroughly to inspect, through the courtesy of Dr. Colladon, who spared neither time nor trouble to enable me to see and understand everything) is what is there called '*pulverisation*.' This process consists of dividing the jet of mineral water into a very fine spray, or powder, so to say, which can in this form be inhaled, and so carried by the air well into the larynx and bronchial tubes. The *pulverisation* is effected by causing a jet of water to impinge forcibly on the back of a little metal plate. By this means it is broken up into a very fine spray; and it appears certain, from a discussion that took place in Paris, at the Academy of Medicine, and in which a large number of eminent men took part, that this very finely divided jet of spray actually enters the lungs and acts on the mucous membrane.\*

"*Physiological Effects of the Waters*.—When drunk, the

\* See "Dr. Dobell's Reports on Diseases of the Chest," vol. I., and "Rev. des Sciences Med.," 1874.



waters cause first a slight feeling of warmth at the stomach ; and, if taken in moderate quantities (three or four glasses a day), they usually cause constipation, more or less pronounced. In large quantity they may induce diarrhœa as a primary effect, to be followed, according to the general law of organic action, by subsequent constipation. The appetite is increased, or at least not diminished. Whether in consequence of the diet, which was very deficient in vegetables owing to the bad season, or as a consequence of the treatment in general, I cannot say, but I found the digestion rather upset. There is almost always induced a great and continual thirst, very difficult to satisfy ; and I thought that the large quantities of fluid, taken on this account, to some extent accounted for the derangement of digestion and the feeling of weight at the stomach which I experienced. The doctors recommend water with a small proportion of coffee (a tablespoonful or two in the tumblerful), for the purpose of overcoming the thirst, and this acts fairly well, though nothing seems able quite to relieve one from this discomfort. For the constipation, the remedy recommended was one new to me, but which was effectual, and deserves to be more widely known. It consists of an *infusion in cold fresh water of whole linseed*. The seeds are set to macerate over night, and the liquor, which is of a thick glairy consistence, almost like uncooked white of egg, is added in about equal quantity to the *vin ordinaire* taken at breakfast. The effects are satisfactory after the use of about half-a-tumblerful in this form twice a day. The mixture is not unpleasant, though it sometimes causes a little griping. . . .

“Perhaps the most marked effect of these waters is,

however, that on the skin. The slightest exertion induces free perspiration, and, even without any exertion, the patient finds himself covered with sweat. For this reason, bathers are recommended not to take long walks or rides, as the cold winds from the mountains, sweeping down on persons whose skin is acting freely, may induce dangerous chills. I was never quite certain that the free sweating I experienced was not partly due to the hot baths and subsequent exposure to the hot steam of the '*salle d'aspiration*,' as much as to the drinking of the water. As I never took more than three glasses a day, and generally only two, I think this must have been so. At least I imagine that if, in England for example, a person were subjected to a hot bath (say of sea water) for ten or fifteen minutes, then to a douche of the same for a similar length of time, and were then sent to inhale steam for forty or fifty minutes, he would probably find himself in a day or two suffering from enfeeblement and sweatings, much as the bathers do at the Mont Dore. The feebleness is also very characteristic, and, while the treatment lasts, patients find themselves disinclined for exertion, and unable to walk or climb as they are accustomed. The heart's action seems to be enfeebled for the time being, as is also the muscular energy in general.

"After getting into bed from the '*salle d'aspiration*,' the patient, who is recommended to sleep for an hour if he can, often finds himself unable to do so, owing to a feeling of excitement of the brain, coupled with a sensation of throbbing or thumping in the head, as if the heart were acting very forcibly, which no doubt is the case. Physiologically speaking, I have no doubt that the baths first excite and then diminish the heart's

action, for which reason one thoroughly agrees with the first recommendation of the doctors, who say that patients suffering from affections of the heart ought not to go to the Mont Dore.

*“Therapeutic Effects of the Treatment.*—The waters of the Mont Dore are said to be specially useful in two classes of cases:—1. In affections of the respiratory organs; 2. In affections of a rheumatic nature. There can, I think, be no doubt that the treatment there pursued has been beneficial, year by year, to a large and increasing number of persons. To begin with the rheumatic cases,—we should expect satisfactory results to rheumatic affections from waters containing a considerable amount of alkaline compounds. Of course, in all places of this kind, it must not be forgotten that, in addition to all the direct effects of treatment, such as patients might have at their own homes, there are to be considered the adjuncts of perfect leisure, ease of mind, fresh air, and change of scene and diet. In the case of the Mont Dore, there are to be added a dry, sandy, and gravelly soil, very suitable both for rheumatic patients and those suffering from chest affections; and also the invigoration caused by mountains whose appearance is continually changing under the influence of sunshine and cloud and storm, and which give to the air coming down from them the same bracing character that is found in that of the Scotch highlands, or, still better, in Switzerland. Speaking generally, these natural agents have so beneficial an influence that many patients would recover, or at least much improve, under them, even if their ailments had not been diagnosed, and if no medical man had ordered them to any given place. Let us allow, however, in accordance with the weight of medical opinion,

that the 30 or 40 grains of mineral matter in each *litre* of the waters [see Table II.] drunk or bathed in have a therapeutic influence as *resolvent*, *diuretic*, *diaphoretic*, *alterative*, and *tonic* agents; let us admit that the alkaline salts and the traces of lithia, calcium, rubidium, etc., combat the rheumatic diathesis, and that the arseniate of soda and the bicarbonate of the protoxide of iron brace up the altered rheumatic patient,—after all these have been duly considered the question remains:—are these the only factors in the cure, or is there anything else to be taken into account? We may even admit that the combination of these constituents, in a natural water, has an effect much more powerful and emphatic than we could hope to obtain by the administration of the ingredients in an artificial solution. Natural *serum sanguinis*, for example, has properties which no artificial imitation, however close, has ever yet succeeded in attaining, or may be hoped to attain. I cannot help thinking, however, after allowance has been made for all arguments of this kind, that part of the secret of the cure, even in rheumatic cases, is due to the *form* of the application as much as to its nature; while in chest-affections, I am sure this is so. In the case of rheumatism, there can be little doubt that the free carbonic acid acts as a calmative of the accompanying pain. At other places (Saint Nectaire, for instance), baths of carbonic acid gas are given to relieve neuralgic pains, and particularly sciatica, before patients can bear baths of mineral water. But, in addition to this, I think the *hot baths and hot douches* must exert an influence much more powerful than could be hoped for from *cold* applications of the same ingredients. In chest-affections there can be no doubt that this is the case—the hot baths and douches there



acting as *large fomentations would*, and soothing all irritation ; while they cause a feeling of weakness and increase the action of the skin, just as hot poultices would do.

“ In the ‘*salle d’aspiration*,’ the patient may be looked upon as being enveloped in poultices all over, and as having similar applications all along the interior of his inflamed mucous membranes as well, since the steam penetrates all the inner part of the breathing organs, and acts as a calmative agent, soothing all the irritation and reducing the thickening there. We are not, therefore, surprised to hear the unanimous verdict, both of doctors and patients, as to the benefit the bathers experience in all forms of bronchitis, and in those cases of chronic recurrent pneumonia that so often end in softening of the lungs with deposition of tubercle, night-sweats, diarrhœa, and death. As to the effects in tubercular consumption, I beg to refer the reader who may wish to know what has been done at the Mont Dore, to the work of the late Dr. Boudant, published (1877) after an experience of twenty years had enabled him to state authoritatively what the powers of the waters were. Dr. Boudant was well acquainted with the progress of medicine, from the time of Laennec, both in France and in Germany. As might have been expected, he supported the views of the French pathologists, rather than those held on the other side of the Rhine ; but his remarks are all fair and judicial. . . . After remarking upon the terrible character of pulmonary consumption, and the folly of those medical men who have mistaken accidental cures for examples of a general law, he says : ‘ Nevertheless, the waters of Mont Dore may moderate and relieve the affection, and occasionally cure it, if it is accidental and of slow and sluggish process, and if circumscribed and in its initial stage. Finally, in certain cases, our



treatment contributes to the cicatrisation of larger or smaller vomicæ by means of the water drunk and used for inhalation. This last means is a true topical treatment, comparable with the dressing of a wound, and whose phases of cicatrisation it is extremely curious, as well as interesting, to follow. In certain circumstances this process takes place even rapidly, either by the approximation of the sides of the cavities with occlusion of them, or by cicatrices at the free surfaces, or by depressions more or less excavated. Frequently, when the cavities are closed, the lung sinks, and flattening may be observed at one or more points of the chest-wall, particularly at the upper part, at the subclavicular region. . . .\*

“To sum up : the course is suitable for the treatment of affections of the tonsils, pharynx and uvula, for coryza and ozæna, for inflammation of the Eustachian tubes spreading to the middle ear and causing deafness ; for chronic tracheitis and bronchitis ; for phthisical affections in general, even when accompanied by hæmoptysis (though here much depends on the experience and skill of the medical attendant, since over-excitation might induce this condition), for chronic pneumonia and pleurisy ; for asthma ; for articular, but especially for muscular rheumatism ; and for some forms of dyspepsia and uterine catarrh. . . .”

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The following extracts from an article on Mont Dore in the October number of “TIME—a monthly magazine edited by Edmund Yates,” give a graphic sketch of the place and its cure :—

“As for the climate while *I* was there it was a down-pour for eighteen days. By the time *you* arrive the

\* See quotations from M. Boudant further on.

fountains of the heavens may be exhausted; but the picture of Mont Dore, as painted in my memory, is like one of Turner's 'Rain—Storm—Wind.' This is what I found from the day of my first bathe until I shook off, not the dust, but the mud from my feet at the door of Chabaury ainé. . . . Notwithstanding storm and rain, mud and gloom, I shall be ever grateful to Mont Dore, and intend to return there. I have been vapoured, boiled, and douched into a different being. It is a new life for me to breathe without pain. . . . You have just time to make the cure. Lay in an ample supply of woollens, flannels, goloshes, macintoshes, and strong shoes. . . . My discipline for the next three weeks was soon written down. I was to commence at 6.30 with a glass of mineral water; at 7 to enter the *salle d'aspiration*, and remain until 8, then return to bed again; after an hour of the warmed bed, a hot foot-bath, and another glass of water before breakfast; at 2 a warm bath with the douche; at 5 o'clock two more glasses of arsenic and sulphur. [See Table II.] So my day would be well occupied. No sooner had the doctor departed than three strong-limbed damsels, laden with flannels of various colours and wooden sabots, rushed into the room, and after a conflict of gesticulations I was made to understand that for the *aspiration* it was essential to have a flannel costume, and to wear these heavy wooden shoes. I selected the least remarkable of the variegated assortment, and was at last left in peace. . . . As the first visitors engage the baths at the most convenient hour, so the last have to commence as early as five o'clock, or even earlier when the place is very full. . . . I placed myself entirely in the hands of the most admirable specimen of a French maid, Mdlle.

Françoise. . . . Françoise called me soon after six. I put on my flannels, a thick ulster, and my sabots. I was then given four tickets, one for the *aspiration*, another for a towel, two for the *chaise-à-porteur*, for I found it was rarely permitted to walk across the Place; so outside my door there was a narrow wooden sedan chair, into which I entered, and two stalwart Auvergneese took me up, jolted me down the narrow stairs, and ran across to the bathing house. . . . .

“I was pleased to find myself landed safely on the first floor. At the door of this mysterious *aspiration* I was ushered into an outer room, in which there was a queer-looking set of half-dressed men being rubbed down like racers; but there was little time for observation. My ulster was removed, the zebra-striped flannel jacket replaced by one of coarser material, and I was shown into a large hall, or rather a succession of halls. At first I could not distinguish anything through the dense cloud of sulphurous vapour [see Table II.], which was rolling out of cauldrons in the centre. At last I perceived a number of persons walking round and round in couples; they had all the appearance of convicts in the exercise yard of a penitentiary, as seen through the atmosphere of a London fog. . . . . Here were collected the halt, the lame, the tottering, the asthmatic. Was it possible that the same air could suit the emaciated careworn forms, and the fat Silenus, who waddled round panting with his apoplectic exertions? And there were haggard *croque-morts* faces which would seem to defy any process of regeneration. But so it was; this was the process through which all evils were to be stewed out of the system. . . .

“I took my place in the treadmill, and for one hour

inhaled the beneficent vapour ; then I was rubbed down, carefully wrapped up, took one of the chairs, and learned the difference between the *descensus* and the *ascensus Averni*. After another glass of water, through slush and mud I was carried to my bedroom-door. There the active Françoise was ready to warm my bed ; and it must be admitted that, after the morning's exertions the sensation of repose was delightful. I was soon in a light sleep, making up the leeway of the night's rest. The loud ringing of all the bells awoke me to prepare for the *table d'hôte* breakfast, where I found everyone as hungry as the preceding evening, and the breakfast was worthy of their appetites. After breakfast, as there was a gleam of sunshine, the square in front of the hotel was crowded with every description of conveyance, ponies and donkeys.

" I was permitted to have my *bain de pied* in my own room.

" I have not yet described the actual bath and douche, for the inhalation process is the *spécialité* of Mont Dore ; but as far as the water is concerned, the baths are delightful ; not so the accommodation afforded, which is disgraceful. The bathers are charged three francs ; and for this there is not a dressing-room, not a strip of carpet—no comfort whatever. The clothes have to be carried out of the rooms to prevent their being wet through by the douche, which keeps the floors and walls continually damp. All the bath charges are at the maximum, the comfort at the minimum rate ; the administration seems only to have one object—to make money—and that it does abundantly. The daily expenses at Mont Dore I calculate as follows :—Room and board, 16 francs ; warm bath, 3 francs ; inhalation, 1 franc ;



two *chaises-à-porteur*, 1 franc ; towels, 2 sous each ; then at the end of the season 10 francs for permission to drink. So the bathing expenses may be calculated at nearly 5 francs a-day, besides the doctor, whose fees vary from 40 to 80 francs, according to the number of the visits. Five francs a-day for twenty days make 100 francs—£4, which each bather expends on his cure. As there are, during the season, 5,000 bathers, a sum of nearly £20,000 must be received by the administration, but put it at £10,000, and reduce this again by £5,000 for the expenditure, there remains £5,000, which should be laid out for the improvement of the town and walks, and for the comfort of the visitors. I am sure that £100 is not so expended ; not a path or road is levelled or gravelled ; to walk or ride on the hills is to scramble through watercourses ; the level spots are swamps ; the ascents are mountain torrents, the public garden is a wilderness of weeds ; and the only café is a broken-down, wooden and leaky cabin. If the local authorities will not do their duty, the higher powers should interfere to prevent a state of things which is a disgrace to French civilisation. . . .

“ I felt grateful to Murray for having sent me to a place where I was relieved from the painful oppression which interfered with all my enjoyments, and the highest recommendation I can give Mont Dore is, that it is my intention, on a future occasion, to place myself under the care of Madame Chabaury aîné (the hotel keeper) again to be steamed, boiled, and bedouched into renewed health and spirits.”

## CHAPTER II.

The Principles and Rules of Treatment established by Long Experience at Mont Dore must be followed till better are found.—Authors selected as Guides for the “Medical Code of Mont Dore.”—Old and New Resources of the Place.—Table II., Bird’s Eye View of the Baths, Waters, etc.—Appliances, Analyses, Temperature, Uses, Distribution, etc.—Diseases for which the “Cure” is suitable.—Description of Present Establishment at Mont Dore, Auvergne.

I DO not doubt that, after “the Mont Dore Cure” has been practised at Bournemouth for a sufficient length of time to enable us to accumulate our own observations, we shall be able to design and carry out some improvements upon the established customs of the Auvergne, suggested by our own experience.\*

But, until that time arrives, I consider that we are bound to carry out faithfully the plans of treatment established at Mont Dore, Auvergne, upon the basis of the accumulated experiences of a succession of eminent physicians, who have had charge of the thousands and thousands of patients who have frequented the place.

For this reason I have most carefully studied all the best records of Mont Dore and its Cure, and in the following pages I shall give abstracts and translations of parts of those which hold the highest place, and in which I

\* In building a new and complete Institution we have been able to avoid the disadvantages in the arrangements of the Auvergne establishment, due to different parts having been built at different times, at different sides of the street, and not communicating with the hotels.

have found the most important information for our guidance.

I shall especially quote from the following typical authors, whose works are representative of the matters in question at different periods in the history of Mont Dore.

1. "Dissertatio Medica de Aquis Montis Aurei." By "Sebastianus Johannes Babtista Lavialle du Masmorèl" [Son of the Resident Crown Inspector at Mont Dore]. Montpellier, 1768.

2. "Recherches sur les Propriétés Physiques, Chimiques, et Médicinales des Eaux du Mont D'Or." Seconde Edition, considérablement augmentée. Par Michel Bertrand, [for 52 years] Inspecteur des Eaux du Mont D'Or, Médecin de l'Hotel-Dieu de Clermont-Ferrand, Membre de la Commission pour les Eaux Minerales Naturelles de l'Académie Royale de Médecine." First edition, 1810; second edition, 1823.

3. "Dictionnaire Général des Eaux Minérales," &c. "Par MM. Durand-Fardel, Eugène Le Bret, J. Lefort, Jules François." 1860.

4. "Les Eaux Minérales du Mont Dore, &c." "Par le Docteur Boudant, Inspecteur-adjoint de ces Eaux, Prof. de l'Ecole de Méd., de Clermont-Ferrand, Médecin de l'Hotel-Dieu, &c., et Lauréat de la Faculté de l'Académie de Médecine de Paris, &c." 1877.

5. "Le Mont Dore et ses Eaux Minerales. Notice Médicale." "Par le Dr. Em. Emond, Médecin Consultant aux Eaux du Mont Dore, Membre Titulaire de la Soc. d'Hydrologie Médicale de Paris, &c." 1879.

For the assistance of my readers I have translated all the passages quoted, and, to avoid prolixity, given them in *précis* when practicable, and I have converted all weights and measures into English standards.

LAVIALLE DU MASMOREL.—The dissertation of Lavialle du Masmorel is interesting as representing the condition of things at Mont Dore\* from the time of its renaissance down to that of Bertrand, by whom it was virtually reconstructed. Some works had been commenced under the orders of Louis XVI., about 1787—8, but these were stopped by the Revolution in the following year, and Bertrand says that the village and baths of Mont Dore were left as they had remained for many centuries, and at that time, and for thirty years afterwards, only three thermal springs were known, as described by Lavialle du Masmorel, who says that “in the valley at the foot of the Golden Mountain or Golden Mountains (*Montes Aurei seu Montibus Aureis, Le Mont d’Or ou les Monts d’Or in Auverniâ Superiori*), at the actual source of the River Duranium, known to the French as the Dordogne, are found certain waters with medicinal properties. . . . There are five of special note and common resort. Three of these may be classed as hot or thermal springs; one, for internal use, being known as the Magdaleine Spring; another as the Great Bath Spring; and the third as Cæsar’s Bath Spring. The remaining two are cold and bitter to the taste, one being known locally as de L’Eglise, or de la Pantouffle, the other as de la Marguérite.”

It is of the former class that M. Lavialle du Masmorel proposes chiefly to treat. He says that the groundwork of his matter, the cases by way of illustration, and the general plan of the subject are taken from notes made

\* For simplicity sake I have adhered throughout to the modern form of the name—“Mont Dore”—by which the place is now called. But Lavialle du Masmorel says it was called in his day *Mont D’Or*, and Bertrand adopts the same spelling.



by his late father, who held the appointment, under the Crown, of Superintendent of the Springs.

"The Magdaleine Spring is in the open air, and its waters run down the main street of the town. The Great Bath Springs (Grand Bain) are enclosed in an arched building of a size proportioned to their volume, some seven feet long by five feet wide, with a wooden partition down the centre, so that patients of both sexes may with decency and convenience bathe at the same time. The waters of the springs come bubbling in at the back of the bath and so fill it.

"The Cæsar's Bath Spring, also known as the 'Petit Bain,' discharges into a single narrow bath, only large enough to accommodate one bather at a time, and the water comes up through the bottom of the bath.

"The temperature of the Cæsar Spring is  $37^{\circ}$  Reaumur [=  $115.25^{\circ}$  Fahr.]; of the Great Bath Spring,  $35^{\circ}$  R. [=  $110.75^{\circ}$  F.]; and of the Magdaleine,  $35^{\circ}$  R. [=  $110.75^{\circ}$  F.]."

Such was the very rude condition of things in 1768, and in which they appear to have remained until Bertrand's time. Thus, M. Boudant says of Bertrand:—"It is necessary to come down to 1810 and 1823, the epoch in which the Researches of Dr. Michel Bertrand appeared, to be satisfied with the records of Mont Dore, and to read a work of depth, *considered justly, even down to the present time, as the Medical Code of Mont Dore.*"

M. Boudant thinks, however, that "the clinical part of the work of this great hydrologist leaves much to be desired under the head of *Diagnosis*," and he says that "the *thermal therapeutics of Mont Dore are now much changed*. M. Bertrand being deprived, like his predecessors, of the

use of auscultation and percussion, of the laryngoscope, and of other means of exploring chest diseases, a confusion became inevitable *in doubtful cases*. . . Nevertheless, when we read the observations of this learned observer with care, we are struck with his sagacity and with his medical tact, and we are astonished to find that with the simple means of investigation of his day he did not make more manifest mistakes. . . During the long and glorious reign of this celebrated inspector, which lasted fifty-two years, it was at his initiation, and by his constant efforts that the real thermal establishment was built, too small at the present day (the works for doubling it have already commenced), but perhaps the most complete monument of this kind of establishment in France, especially since the completion under the administration of Dr. Michel Bertrand's son, Dr. Pierre Bertrand, of the establishment devoted to the vapour douches, the inhalations, and the pulverisations, employed daily as the most direct mode of medication for certain rheumatic and neuralgic pains, and for chronic diseases of the throat and respiratory passages."

M. Emond says:—"Of all the thermal stations of France, that of Mont Dore is assuredly one of the most ancient and one of the most important. Its origin can be traced back to the most distant times.

"Already known to the Gauls, who had swimming baths there, it was much frequented by the Romans. The ruins and *débris* of columns which remain even to this day testify to the magnificent scale on which their establishment was constructed. It was apparently forgotten throughout the middle ages. Sidoine Apollinaire, alone, in the fifteenth century mentioned it in his letters to his son Appert, under the name of '*Calentes Bais*.'

From that time it is not mentioned again till the seventeenth century in the works of J. Banc, and of Bompert, and in the eighteenth in those of Lemonnier, Lavialle du Masmorel, and Brieude. But it is necessary to come down to 1810 to find a truly serious work based upon wisely collected observations. Thus *the work of Michel Bertrand, who directed this station for more than fifty years, has become classic, and may be called the Medical Code of Mont Dore.*"

"It is due to the initiative and indefatigable zeal of this great hydrologist that these waters have recovered their ancient place, and reconquered their antique renown . . . and they have received the sanction of the medical world, which has accepted with favour the therapeutic method employed at Mont Dore. In fact, physicians know well that at the present time no other establishment in Europe possesses the powerful action of the *bathing appliances* of Mont Dore. The influx of patients becomes more and more considerable each year; those who used to go for their 'Cures' to Germany, Bohemia, or the Engadine, now give this place the preference."

It is evident, then, that by a general consensus of opinion, at which no one who has studied his "Researches" can be surprised, M. Bertrand is to be considered the greatest authority in all that relates to the Mont Dore Cure. But since his time, as M. Boudant has pointed out, changes have occurred in the views of the profession as to certain points of treatment, and improved appliances have been added to the establishment at Mont Dore. So that it is necessary to add to the observations and directions of Bertrand the results of the experience of the physicians practising at Mont Dore at the present day.

When Bertrand published the second edition of his work in 1823 he pointed out that there was a growing tendency to prefer the temperate baths to those at the full natural temperature. He warned his successors against this innovation, which he considered in the light of an important error, and he predicted that the Mont Dore Cure would fall into desuetude if ever the temperate baths should be placed in the first class—if ever their use should come to prevail over that of the Grand Bain. He says “the Grand Bain, and the Magdaleine Spring for drinking, have made the reputation of Mont Dore—they constitute the topical and special medicine of the place. This must never be lost sight of. It is by them that, contrary to all hope, so many rheumatics have recovered the use of their limbs—that so many affections of the chest have been cured.”

It must be borne in mind that in the day when this was written, inhalation rooms, aspiration rooms, and vaporaria were unknown, and that the only means of obtaining the great advantages now secured by them consisted in the use of the hottest baths—the Grand Bain—the vapour from which was unconsciously inhaled during immersion in the bath and while in the bath-rooms; and I do not doubt for a moment that Bertrand was right in the warning he gave, and that if the highest temperature baths had been given up in favour of the temperate baths, *without the establishment of inhalation and aspiration rooms, and vaporaria*, the greatest advantages of the treatment would have been lost—the reputation of Mont Dore would have declined instead of rising as it has done.

Bertrand suggested that “the severe aspect of the



hottest baths, the circumspection required in the employment of them, *and the very active supervision* which they require, greatly predispose to the preference which may be introduced with regard to the temperate baths;" with these, he says, "everything would go mildly and without trouble, but *the cases would go mildly also!*" This insinuation is indignantly rebutted by Boudant, who says:—

"In spite of the sinister predictions of the great master [Bertrand], it is not the circumscription of the accommodation in the baths of the Pavillon [Grand Bain], or the active surveillance they demand, that at the present day determines the preference most frequently given to the temperate baths, but rather the weakness of the temperaments and the serious condition of the patients who now resort to Mont Dore. We find less often in our day than in that of Bertrand constitutions sufficiently robust to bear his system of balneation. If that distinguished hydrologist were still among us he would be obliged to do as we do, so often are our subjects debilitated, enervated, and little disposed to complete and prompt physiological reactions.

"Without fear of contradiction we nevertheless dare to say that with our *new resources of thermal therapeutics* we obtain results at least as advantageous as his, and this without violent shock, without trouble, without perturbing crises. In fact, with the temperate baths and the inhalations of water in vapour and in spray, we are able, perhaps, to do better than he, and the installation of the new *douches* is still another powerful help. Moreover, we can give the assurance that whenever the special balneation of the Pavillon [Grand Bain] ought to be employed it is not neglected."

TABL

BIRD'S EYE VIEW OF THE BATHS  
FROM 17

AUTHOR AND DATE.	NAME OF SPRING AT MONT DORE.	TEMPERATURE.	DISTRIBUTION.
Lavialle du Masmorel. 1768.	César (Petit Bain).	37° R. = 115·25° F.	A single narrow bath large enough for bather at a time, the waters come through the bottom of the bath.
Bertrand. 1823.	César (Petit Bain).	45° C. = 113° F.	Mixed with the Caroline spring they sup- ply the Thermal establishment. Douches bath rooms and Piscines supplied by combined waters. All the douches exc- cept those of the Pavilion.
Boudant. 1877.	César (Petit Bain).	43·7° C. Rotureau = 110·66° F. 43·1° C. Lefort = 109·58° F.	Mixed with the Caroline spring supply reservoirs for the baths and douches the "Grand Salle." Mixed with Marguerite as temperate bath in two rooms at side of the Pavilion.
Emond. 1879.	César (Petit Bain).	45° C. = 113° F.	Mixed with the Caroline spring and cool- ed by the St. Marguerite, supply the bath rooms of the "Grand Galerie," a room being supplied with ascending and descending douches (temperate baths).
Lavialle du Masmorel. 1768.	Grand Bain.	35° R. = 110·75° F.	Received direct into an arched build- ing about 7 ft. by 5, with wooden partition to divide it for the two sexes.
Bertrand. 1823.	Grand Bain or St. Jean.	Five Bath-rooms differ as follows:—1. 104° F. 2. 105·8° F. 3. 108·5° F. 4. 107·6° F. 5. 103·1° F.	To supply the Pavilion.
Boudant. 1877.	Grand Bain or St. Jean or "du Pavilion."	Five Bath-rooms differ as follows:—1. 102·2° F. 2. 105·8° F. 3. 111·2° F. 4. 109·4° F. 5. 104° F.	Supply 5 bath rooms in the form of piscines in the Pavilion, temperature be- ing from 102·2 Fahr. to 111° Fahr. accor- ding to the room.
Emond. 1879.	Grand Bain or St. Jean or "du Pavilion."	Five Bath-rooms differ as follows:—1. 107·6° F. 2. 109·4° F. 3. 109·4° F. 4. 107·6° F. 5. 107·6° F.	Supply the Pavilion in the great trou- pe used as plunges.

## WATERS, ETC., OF MONT DORE.

1880.

MODE OF USE.	REMARKS.
For Bathing. Usually preceded by the Grand Bain, which has a lower temperature. Average duration of bath less than a quarter of an hour. Used in the morning fasting.	The similarity of its waters to those of the Grand Bain is so exact that they differ only in temp., which is 2° R. higher; the time spent in bath should be rather less than in Grand Bain.
Used for baths and douches in the morning fasting. Average duration $\frac{1}{4}$ of an hour.	The douche when used always precedes the bath. The duration of a douche on one part should not exceed a quarter of an hour.
. Used as hot baths at natural temperature. 2. Used mixed with Madeleine and with Marguerite to cool them as temperate baths and temperate douches.	Boudant thinks Bertrand's thermometer must have been wrong when it showed 45° C., as it is not likely the temperature of this water has gone down 2° C. since.
The duration of a temperate bath is $\frac{3}{4}$ of an hour with or without douche. Baths and douches.	Boudant thinks the variations of temperature stated in the experiments of Bertrand, Longchamp, Chevalier, Rotureau, and Lefort can only be explained by defects in their thermometers, as for 18 years, using the same thermometer, Boudant has never found the least difference in the temperatures.
Whole bath, Semicupium, Douche. Bath $\frac{1}{4}$ of hour. Douche $\frac{1}{4}$ of hour.	
Whole bath, Semicupium, Douche.	
In the form of Piscines immediately over the water jets.	They were formerly called "Grand Bain" to distinguish from César, which was called "Petit Bain." "The mineralisation being nearly the same as the others, the reputation it has always had for specially curing internal complaints of a rheumatic nature must be due to its greater heat and the more direct effect of its dynamic electricity."
Bath, Semicupium.	

TABLE II.—BIRD'S EYE VIEW OF THE BATHS, WATERS, ETC

AUTHOR AND DATE.	NAME OF SPRING AT MONT DORE.	TEMPERATURE.	DISTRIBUTION.
Lavialle du Masmorel. 1768.	Magdelaine.	35° R. = 110·75° F.	In the open air, its waters running down the main street.
Bertrand. 1823.	Magdelaine.	45·5° C. = 113° F.	Received in a little square building built about 1803. Remains had been found of a Roman aqueduct which used to con- vey the water. Bertrand proposed to again utilise this water for the baths, to increase their temperature at pleasure in the piscines.
Boudant. 1877.	Madeleine or Bertrand.	45·5° C. = 113° F. "The hottest and most abundant water."	Drinking fountains, baths and douche of N. and S. galleries, and of the inha- lation and pulverization halls, and <i>vapour</i> <i>douches</i> .
Emond. 1879.	Madeleine or Bertrand.	45·5° C. = 113° F.	The same as Boudant.
Lavialle du Masmorel. 1768.	Marguerite and L'Eglise.	9° R. = 52·25° F.	Not described.
Bertrand. 1823.	Marguerite.	Cold. No temperature given.	Received in a small basin of trimmed stones.
Boudant. 1877.	Marguerite.	11° C. = 51·8° F.	Situated in a copse wood not far from the César spring.
Emond. 1879.	Marguerite.	10° C. = 50° F.	Same as Boudant.



F MONT DORE. FROM 1768 TO 1880—(continued).

MODE OF USE.	REMARKS.
<p>For drinking only. To be taken from 6 to 7 in the morning fasting, in divided doses amounting to about <math>2\frac{1}{2}</math> imperial pints per day.</p>	<p>During the bathing course one third of the water is drunk half an hour before the bath, one third while in the bath, and one third when put to bed after the bath.</p>
<p>For drinking only. In the morning fasting. For those who bathe it does not matter whether they are taken before or after the bath. Dose about 3 <i>verres</i> (each holding about 7 oz.) or a little over an imperial pint <i>per day</i> in divided and regulated doses.</p>	<p>They are given pure or mixed with lime water, milk, rice water, gum arabic water, lime flower tea, &amp;c., never more than <math>\frac{1}{10}</math>th part of these being added. The intervals and doses of water require careful regulation.</p>
<p>Used as temperate baths and douches (see César). For drinking, the water is taken in the morning and afternoon fasting. The dose is from 3 to 5 "<i>verres</i>," usually 4 per day, 3 in the morning at intervals of half an hour, and 1 in the afternoon an hour or two before dinner, each glass (<i>verre</i>) about <math>\frac{1}{3}</math> of an imperial pint.</p>	<p>"This important spring, which each year produces numerous cures, with the baths of César and the Pavilion (Grand Bain), constitute the principal elements of Therapeutics at Mont Dore." Boudant considers the Boyer spring an offshoot from this. Most recent analysis (Dr. Tidy, 1880) gives—Total Solids 24.70 gr. per quart, Arseniate Soda 0.091 gr. per quart.</p>
<p>Same as Boudant.</p>	<p>Both Boudant and Emond agree that saturation begins to be apparent about the fifteenth day, and it is rare for the waters to be borne after the twentieth. The revulsion which then occurs they attribute chiefly to the effect of the arseniate of soda on the mucous membranes.</p>
<p>For drinking. Laviaille du Masmorel's father introduced the use of St. Marguerite as a drinking water, either <i>mixed with wine</i> or <i>warmed</i>. Before that a prejudice had existed against it, which he attributes to its low temperature.</p>	<p>Mineralization very slight.</p>
<p>Mixed with wine it makes an agreeable drink, but soon irritates delicate chests. It was also used to clean atonic ulcers, because of its carbonic acid gas and styptic properties.</p>	<p>The water is cold, limpid, styptic, and gaseous, but contains no other remarkable chemical properties. Another cold spring without a name arises close by, which is possibly the one described by Laviaille du Masmorel as L'Eglise. M. Bertrand proposed to conduct both of these into the Grande Salle des Bains, so as to utilize them for preparing the temperate baths, instead of using the water of the Dordogne as heretofore.</p>
<p>Table water similar to Seltzer and St. Galmier, but the carbonic acid excites cough in persons with delicate chests, to whom it is therefore forbidden. Used to cool the water for temperate baths.</p>	<p>Its mineralization is nil. Used to cool the César and Madeleine springs (in addition to the river water) to any required temperature for the temperate baths.</p>
<p>Same as Boudant.</p>	<p>Same as Boudant.</p>

TABLE II.—BIRD'S EYE VIEW OF THE BATHS, WATERS, ET

AUTHOR AND DATE.	NAME OF SPRING AT MONT DORE.	TEMPERATURE.	DISTRIBUTION.
Bertrand, Boudant, and Emond. Not named by Lavialle du Masm.	Caroline.	Considered to be an offshoot of the César spring.	Distributed in the same manner as César spring.
Bertrand. 1823. Not named by Lavialle du Masm.	Ramond and Rigny.	42° C. = 107·6° F.	Mixed they supply the piscines (for poor).
Boudant and Emond. 1877. 1879.	Ramond and Rigny.	43° C. = 109·4° F.	Employed in the same places as Bain St. Jean or Pavillon (Grand Bain).
Boudant and Emond. 1877. 1879. Not named by Lavialle du Masm. or Ber- trand.	Boyer and Pigeon.	43° C. = 109·4° F.	Specially used for ladies' foot baths a for exportation.

## NOTES.

I. The water from the Source de la Madeleine, the typical drinking water of Mont Dore, has been specially analysed for this work by Prof. C. Meymott Tidy, and he finds the total solids contained per gallon to be 98·80 grains, and the quantity of sodic arsenate (arseniate of soda) per gallon to be 0·364 grains. (The total solids contained in sea water from the British Channel amount to about 2,541·0 grains per gallon.)

II. "The waters of Mont Dore have a very weak mineralization. . . . J. Lefort and the authors of the 'Dictionnaire des Eaux Minerales' have classed them among the 'Bicarbonated Mixed Ferruginous;' M. Bertrand placed them with the 'Slightly Alkaline,' and the physicians of the present day describe them under the name of 'Arsenical.'"—Emond, 1879. The solid contents are chiefly silica and bicarbonates, sulphates or chlorides of soda, potass, lime, and magnesia.

OF MONT DORE. FROM 1768 TO 1880—(continued).

MODE OF USE.	REMARKS.
César.	See César.
Les piscines for the poor.	Both of these springs were found in clearing away the rubbish when the new establishment was built under Bertrand. They had been used by the Romans.
Ramond is called by Emond the most highly ferruginous, but it only contains 0·0317 per quartre = about $\frac{3}{100}$ of a grain in $35\frac{1}{4}$ fluid ounces!	In Emond's English edition the iron in Ramond is given as 8·0207 per quart, but this is a clerical error, the 8· should be 0·. The Ramond Rigny baths are open of an evening at reduced price for the less easy classes.
These are only used as supplementary supplies to the other Thermal waters. Boyer is supposed to be an offshoot of Madeleine, although the temperature is lower.	Boudant gives the temperature as 38° C.=100·4° Fahr., but this must be a clerical error, as he states that the water is the same as Madeleine.

NOTES.

III. "The best reagents have never detected the least trace of either sulphur or sulphuretted hydrogen in the Mont Dore waters. The presence of arsenic is easily shown. Analysis shows that the pulverized water of the Aspiration Halls all the chemical properties are preserved."—Boudant, 1877.

IV. "The Baths of Mont Dore, which were resorted to by Julius Cæsar, are now at 110° F., about the highest temperature which the human body is capable of sustaining unhurt. The water of Cæsar's Bath forms a deposit of hydrated peroxide of iron, persilicate of iron, and basic perphosphate of iron."—Althaus, 1862.

V. "The Waters of Mont Dore are favourably conditioned for conveying in their vapour a considerable part of their mineral contents, including arseniate of soda."—Lefort.

It is evident from the foregoing remarks of M. Boudant that the whole point of the discussion turns upon the *introduction of the new appliances*, and that, as Bertrand had no means of knowing that these would be introduced after his day, he was quite right in the warning he gave.

The work of Bertrand being, then, as we have seen, unquestionably accepted by his successors as the classic "Medical Code of Mont Dore," I have adopted it as the basis of the following dissertation. I have carefully compared at every step his statements with theirs, but, in order to avoid needless repetitions, I have only given their views when they differ in any noteworthy way from his, or refer to modifications in the means or modes of treatment introduced since his time.

In reading the various treatises written in different languages and at different dates, much confusion is apt to arise from the facts,—that the number of springs spoken of by different authors is not always the same; that alterations have been made from time to time in the arrangements of the establishments at Mont Dore; and that different springs have been at different times supplied to different parts of the buildings, and used sometimes under the names of the baths or halls which they supply, sometimes under those of the sources themselves. This confusion is increased by the use of different standards of weights, measures, and temperatures by the different authors.

To avoid these difficulties on the part of my readers I have, for their help and convenience, drawn up a table (Table II., pp. 46-51), in which the authors and dates, the names of each spring, the places to which it is distributed, the uses to which it is put, and the weights,



measures, and temperatures, reduced to English standards, can be seen at a glance.

From this table, and from the analysis of the waters, we see that the Medical Armaments of Mont Dore comprise:—

1. Certain mineral waters. (See p. 11 and Table II., pp. 46-51.)

2. Water baths of all descriptions, and of various temperatures.

3. Water douches of all descriptions and of various temperatures.

4. Vapour baths of all descriptions.

5. Vapour douches of all descriptions.

6. Inhalations of vapour.

7. Aspirations of water in the form of spray.

8. Nasal irrigations.

9. Gargles of water at different temperatures.

10. A definite system of management before, during, and after the baths.

11. Diet and regimen.

When we survey this array of means of treatment, many of which are of great power, we cannot be surprised to learn that, when they are wisely used, very definite and important results are produced.

What these results are, and how they are best obtained—and, let it be particularly observed, how they are to be obtained with as little risk of accident as possible—will be seen from the following collated observations of experienced physicians at Mont Dore.

In the first place let me enumerate the different diseases considered by the Mont Dore physicians as those for which the treatment is most suitable.

I.—In the fifteenth century Sidoine Apollinaire,

who lived in the Auvergne, spoke of the Mont Dore "Calentes Baïæ" as "Phthisiscentibus Medicabiles."

II.—In 1768 M. Lavialle du Masmorel says "the waters are of remarkable efficacy in cases of thickness and impeded flow of the bodily humours, coagulated and acrid lymph, obstruction of the viscera, various internal suppurations, local atony, and infarction of membranes. They are accordingly and with reason considered specifics in almost every kind of *catarrh*, in common coughs, acute pulmonary abscesses, ulcers of the lungs, the first and second stages of pulmonary phthisis, humoral asthma, and various allied complaints, such as chronic accumulations of phlegm in the air passages, and slight cases of pleural adhesion. And they are no less useful where there is any obstruction of the viscera or glands, or want of nerve-power, in gouty or rheumatic affections, lymphatic swellings, anchyloses, scorbutic and strumous virus, and in every kind of disorder due to the above-mentioned causes." And he gives illustrative cases.

III.—In 1823 M. Bertrand gives the following list:—  
A. Chronic diseases of the chest—

- 1, presenting the characters of chronic pulmonary catarrh.
- 2, simulating phthisis, coming on after the cessation of the pains of muscular rheumatism.
- 3, simulating phthisis, coming on after the cessation of gouty pains.
- 4, presenting the characters of phthisis, following immediately upon the retrocession of a dartrous\* affection.

\* "Dartreux (F.), Dartrous, Herpetic, participating in the

5, in which hæmoptysis had been the principal symptom.

6, simulating tuberculous phthisis.

*B.* Pulmonary phthisis arrested by the use of the waters.

*C.* Neuroses of respiration.

*D.* Chronic affections of the heart.

*E.* Chronic affections of the stomach.

*F.* Chronic affections of the intestines.

*G.* Chronic affections of the uterus.

*H.* Tabes dorsalis.

*I.* Paralysis.

*K.* Chronic muscular rheumatism.

*L.* Chronic gouty rheumatism.

*M.* Lesions of the articulations occasioned by gout.

*N.* Consecutive dislocations of the femur.

IV.—In 1877 M. Boudant gives the following “list of diseases and morbid conditions for which the Mont Dore treatment is suitable :”—

1. It is competent to modify certain diatheses or constitutional diseases.

2. It is useful in diathetic rheumatism.

3. It is useful in nodulated rheumatism or rheumatic gout.

4. In the gouty diathesis.

5. In the dartrous or herpetic or psoric diathesis.

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characters of Dartre or Herpes. . . . Dartre has been used at one time or another for almost every disease of the skin. The French have given the name *Diathèse Dartreuse*, *Dartrous Diathesis*, to a peculiar state of health which renders its subjects liable to general eruptions of different forms which are always met with in the young, are symmetrical, and are controlled by Arsenic.”—“Dunghlison’s Dictionary of Medical Science,” 1876.

6. In constitutional syphilis.
7. In the serofulous diathesis.
8. In the tuberculous diathesis.
9. In chloro-anæmia and the lymphatic temperament.
10. In chronic coryza and ozæna.
11. In chronic palatine and tonsillar sore throats, and hypertrophy of the tonsils.
12. In granular pharyngitis.
13. Catarrh of the Eustachian tube, with more or less deafness.
14. Chronic laryngitis.
15. Laryngeal phthisis.
16. Nervous aphonia.
17. Chronic tracheitis.
18. Chronic bronchitis.
19. Bronchitis "*à râles bulaires* ; and *à râles vibrants*."
20. Chronic bronchorrhœa.
21. Hæmoptysis, bronchial or pulmonary.
22. Pulmonary phthisis.
23. Tuberculous phthisis.
24. Caseous phthisis and phthisical pneumonia.
25. Phthisis of the bronchial glands.
26. Chronic pneumonia.
27. Chronic pleurisy.
28. Different species of asthma, emphysema, and pulmonary œdema.
29. Cardiac asthma.
30. Angina pectoris.
31. Canine or barking cough.
32. Rheumatic neuroses—facial, intercostal, præcordial, femoro-popliteal, and other neuralgias.
33. Rheumatic affections of muscles—cervical, deltoid, chest, lumbar, abdominal, femoral, and others.



34. Pleurodyne.

35. Chronic arthritis and its consequences—stiff joints, ankylosis, synovial effusion, engorgement of the articular surfaces, white swelling, caries, fistulous abscess, etc.

36. Coxalgia and spontaneous luxation.

37. Affections of the digestive passages—gastralgia, enteralgia, dyspepsia, chronic diarrhœa.

38. Uterine catarrh and leucorrhœa.

39. Spermatorrhœa and dorsal consumption—tabes dorsalis.

V.—The list given by M. Emond in 1879 is more condensed than that of M. Boudant, and therefore I append to each heading some of his comments.

#### 1.—PULMONARY PHTHISIS.

In considering whether a phthisical patient shall be treated with sulphurous waters or arsenical, M. Emond says, as the result of the experience at Mont Dore, that those in whom the pulmonary lesions present an irritative character find most good from the waters of Mont Dore, which fulfil a double indication by supplying calmative tonics or strengthening sedatives. They remove congestion of the lungs, and facilitate the resolution of inflammatory products.

#### 2.—CHRONIC BRONCHITIS.

“Chronic bronchitis is certainly, of all the affections treated at Mont Dore, one of the commonest and one of those which yield the most satisfactory cures: yet it is rare to meet with simple, uncomplicated bronchitis. The

cases sent to Mont Dore are generally obstinate and chronic cases, which, having resisted all usual medication, have been sent in despair by their physicians to try the thermal treatment."

### 3.—ASTHMA, EMPHYSEMA.

Brieude said in 1788, "Every kind of asthma finds relief here." M. Emond adds:—"At the present time asthmatics not only find relief here, but they find a cure by the aid of the beneficent vapours which they aspire, as abundantly proved by the numerous observations collected by the physicians at this station."

### 4.—CHRONIC PLEURISY.

"The numerous observations, collected each year by the clinicians of Mont Dore, demonstrate in the clearest manner that the thermal treatment facilitates the absorption of pleuritic effusions, of pseudo-membranous deposits, of albuminous secretions, of adhesions and other productions of variable character connected with the pleura."

### 5.—PHARYNGITIS.

"This is often found at Mont Dore, and is certainly one of the complaints most easily cured, especially since the introduction of pulverisation. The use of pulverised water and douches of spray produce the most palpable and immediate effects."

### 6.—LARYNGITIS.

"When judiciously used, the Mont Dore treatment supplies most precious resources in chronic laryngitis.

Like all the other mucous membranes, that of the larynx yields to its alterative action."

#### 7.—CORYZA.

"According to M. Mascarel, the most inveterate coryzas were unable to resist the treatment at Mont Dore." M. Emond says, that since the introduction of the nasopharyngeal douches, the results are still more prompt and satisfactory in chronic coryza and ulcerative affections of the pituitary membrane.

#### 8.—RHEUMATISM.

"At Mont Dore we meet with—and it would seem as though this were its true speciality—all chronic pains which have their seat in the joints or muscles; and the great influx of rheumatics who crowd to Mont Dore during the season is justified by the marvellous effects of the thermal treatment to which they are submitted."

#### 9.—UTERINE AFFECTIONS.

"For example, in leucorrhœa resulting from uterine catarrh or from a general atonic state, the exciting action of the waters is shown by the rapid restoration of strength and the disappearance of the discharge."

#### 10.—EXTERNAL AFFECTIONS OF THE EYES.

"Everybody knows the good effects of pulverised pure water in affections of the external eye. Those of Mont Dore are more powerful and more energetic in their good effects."

THE PRESENT ESTABLISHMENT at Mont Dore (Auvergne), by which the important results above detailed are obtained, is thus described by Emond and Boudant. For further information, and comparison with its former state, see Table II., pp. 46-51.

EMOND 1879.—The building for the baths—the most ancient and the most important—was constructed in lava in 1830. It is built on the side of the mountain of the Angle, on the spot where the springs rise.

It is composed as follows:—

*On the Ground Floor—*

- (1.) The hall of the Pas-Perdues, comprising the drinking-fountains and the bureau of administration.
- (2.) The north gallery, with 20 bath-rooms with douches, and the south gallery, with 30.
- (3.) The piscines, large halls divided into three compartments. The first is sub-divided into three large baths of lava, and two lateral halls, where, independently of two large swimming baths, there are also arranged eight douches. This part of the establishment is reserved for the poor.

*On the First Story—*

- (4.) The Pavilion, which is situated immediately over the Bain de César, and contains 7 bath-rooms, dug out of the rock. Five of these bath-rooms are reserved for the baths of running water at the natural temperature. It is here

that the *men* have hitherto taken their foot-baths.

- (5.) At the two extremities are 2 new galleries, inclosing each 16 bath-rooms.
- (6.) The Grand Gallery, which is joined to the Pavilion by a staircase of fourteen steps, placed under an arcade. It contains 18 bath-rooms, spacious and well lighted, inclosing great baths made of lava, and all provided with douches. Here are arranged, as in the galleries on the ground floor, only the *temperate baths*.

The Casino, the entrance to which is from the landing on the staircase. The Casino is composed of the theatre, the reading-room, the billiard-room, and the buffet.

#### THE STEAM-BUILDING—

Is separated from the baths by Favard-street. Its principal front looks up the Place des Thermes. (It was finished in 1851; but the new administration intends to increase its dimensions, to meet the growing wants of the increased number of bathers.) Here the waters are administered in steam and spray.

- (7.) *The ground floor* is composed right and left of two galleries reserved for the *steam douches*, and between these galleries are two large halls for pulverisation, entered by dressing-rooms.
- (8.) *On the first story*, reached by a good staircase, are the 6 halls for inhalation. Here the patients breathe the mineral waters reduced to steam. They are four in number for each sex, all graduated as to the temperature. The first



has a temperature of from  $28^{\circ}$  C. ( $=82.4$  Fahr.) to  $30^{\circ}$  C. ( $=86^{\circ}$  Fahr.); the second from  $30^{\circ}$  C. ( $=86^{\circ}$  Fahr.) to  $32^{\circ}$  C. ( $=89.6$  Fahr.). The other two have a lower temperature.

(9.) Underground inhalation halls for the poor.

BOUDANT, 1877.—“The thermal prescriptions of Mont Dore consisted formerly—very simply—in the administration of the mineral waters for drinking and as baths. . . . Since the new arrangement of the establishment, they are employed under the more varied forms of drinking, bath, demi-bath, inhalation, pulverisation, gargle, foot-bath, water-douche, vapour-douche, ascending-douche, throat irrigation, nasal irrigation, etc., etc.”

“*The Thermal Establishments.*—These are two in number; one appropriated to the baths and douches of water, the other to the vapour douches, inhalations, and pulverised water.”

“*The halls for inhalation, for pulverised water, and the rooms for the vapour douches* are in a *detached* building near the baths . . . The waters of the Madeleine Spring supply this establishment, which at the present day is of extreme importance in thermal therapeutics.”

(See Bird's Eye View of the Baths, Waters, etc., Table II., pp. 46-51.)

## CHAPTER III.

Experiences and Opinions of Mont Dore Physicians.—The Phenomena observed during Immersion in the Hot Baths.—State of Bather, on leaving the Bath, when put to Bed, during the day, during the Course of Treatment.—Duration of Treatment.—Certain Mischances during the Use of the Baths and the Methods of Treating them.—Hot Baths.—Piscines.—Half Baths.—Foot Baths.—Temperate Baths.—Douches.—Vapour Baths.—Vapour Douches.—Inhalations.—Pulverised Water Aspirations.—Nasal Irrigations.—Throat Irrigations.—Gargles.—The Internal Use of Mineral Waters: their Actions on the Skin, on Expectoration, on the Urine, on the Alvine Evacuations.—Effects of the Auvergne Country on Hæmoptysis.—Diet and Regimen at Mont Dore.—Duration of the Cure, etc.—Transportation of Waters.—Mode of Administration and Effects when Taken at Home.

HAVING passed in review the lists of affections for which the Mont Dore treatment is considered to be suitable, and the various medicaments, apparatus, and other appliances by which it is conducted; we must now carefully consider the observations, opinions, and experiences of the most distinguished physicians who have organised and practised the system comprised under the name of “the Mont Dore Cure.” (For explanations as to the baths and waters referred to, see Table II., pp. 46, 51. For the titles of the works quoted, see p. 39.)

THE OBVIOUS AND IMMEDIATE EFFECTS OF THE  
BATH.—LAVIALLE DU MASMOREL.

On first entering the bath, the patients are astonished

and alarmed at the warmth (see pp. 17, 18); but, when once the body is entirely immersed, they experience a pleasant, soft glow of heat. This is followed, however, by more or less difficulty of breathing, which gradually increases, and in seven or eight minutes becomes very considerable, and is accompanied by a markedly higher pulse. The face becomes florid and the vessels perceptibly swollen, while small beads of perspiration can be seen on the skin, even under the water of the bath. After a quarter of an hour, the above-mentioned symptoms are even more marked, especially the difficulty of breathing.

“This stage indicates the limit of the period during which the bath can be borne, and must be carefully guarded against, or at least noticed in sufficient time to save the patients from becoming affected with giddiness and syncope, and so causing much trouble to the bath attendants and doctors; for, after too long an exposure to the action of the bath, patients sometimes lie apparently half-dead, and are also liable to a no less serious danger whilst they are naked and being rubbed dry, wrapped up and carried off to bed—which is sure in such cases to happen to be at an unfortunate distance!”

#### SOME PHENOMENA OBSERVED DURING IMMERSION IN THE GRAND-BAIN.—BERTRAND.

A person who enters the Grand-Bain for the first time experiences a stinging heat over the whole surface of the body, a sort of spasm of anxiety, of difficulty of breathing, and of general perturbation, which for a few moments prevents him from remaining in it. He plunges in, and jumps out again, and at last, after continuing these

movements for a few moments, he bears the new medium in which he finds himself immersed.

The first instants of complete immersion are marked by an oppression in which the pulse participates. The surface of the body colours up, and becomes covered with perspiration. The skin becomes more dense; later on, the arteries beat forcibly and, generally, about the fifteenth minute, the pulse is not less than 100.

During immersion, pains occasioned by caries of the bones, or by venereal infection, are exasperated. Those, on the contrary, which depend upon rheumatism diminish from the first few minutes, and are soon suppressed. Hence arises the desire of many patients to remain in the bath longer than is proper—a desire which would be to their sorrow, if the physician should be weak enough or inexperienced enough to give way to it.

The above phenomena are those generally observed; but age, sex, strength, susceptibility of the patient, the nature of the disease, the greater or less irritability of the skin, and the state of the atmosphere, introduce notable modifications. Thus, *cæteris paribus*, the old, and people of lax fibre and little excitability, bear the baths for the longest time, because their sensibility of skin is weakened. M. Bertrand says he has seen some phthisical persons remain three-quarters of an hour in the bath without showing any sensible alteration. The vital forces had left the cutaneous tissue.

#### STATE OF THE BATHER ON COMING OUT OF THE BATH.— LAVIALLE DU MASMOREL.

When the patient comes out of the bath he is carefully dried with warm towels, and rolled in a wrapper,

made for the purpose, decently covered with clothes or rugs, placed in a sedan-chair, and in this fashion carried to a bed, previously made very warm, in which he is covered up and carefully protected from too much air. After a short time a glass of Thermal water is taken, and scarcely six or eight minutes elapse before he breaks out into a profuse perspiration all over. The patient's face is then gently wiped, so that he may feel less discomfort from the streams of perspiration, though this should not be done more than the actual inconvenience requires.

The perspiration is kept up for a whole hour, and draughts of the Thermal water are given repeatedly, about a pint in all being taken. At the end of the hour the covering next the skin is taken off, he is laid naked on the bed, rubbed dry, clad in a moderately warm garment, and moved if possible to a fresh bed. Presently this garment is changed, and by gently moving the body to and fro in the bed a current of air is gradually allowed to circulate round the patient. In this way the perspiration is checked by degrees (for care must, of course, be taken not to check it suddenly, on account of the mischief which, as is well known, would result), and no longer artificially encouraged, so that any undue lowering of the patient's strength is avoided. After undergoing this sweating the patients feel their heads heavy, their faces flushed, and their strength somewhat exhausted, and they are ordered to take some meat-broth or a glass of wine, with a crust of bread soaked in it. They are duly cautioned against exposing themselves too freely to the air, and ordered to wear flannel or woollen fabrics next the skin, so as to absorb the perspiration, which is more than normal for the next



twenty-four hours. After thus perspiring the urine is secreted more copiously, and is of a deeper yellow colour.

STATE OF THE BATHER ON COMING OUT OF THE BATH.—  
BERTRAND.

When a person comes out of the bath the skin is strongly coloured, the perspiration starts out all over the body. There is a well marked state of fever.

This febrile excitement differs much from that dependent upon a pathological state. In the latter case the perspiration appears, as a rule, either at the decline or during a remission of the fever. In the former case the acceleration of the circulation and the cutaneous exhalations proceed together. In addition to the increase of density and stronger colouration, the skin is remarkable for the unctuous matter which covers it, and for its softness to the touch. This softness and unctuousity may be attributed to the secretion of the sebaceous follicles being augmented at once by the temperature of the bath and the stimulant action of its mineral constituents.

STATE OF THE BATHER WHEN PUT TO BED.—BERTRAND.

The pulse is large and soft, its frequency diminishes; the breathing becomes more and more free, the febrile state insensibly subsides, a pleasant, moderated warmth succeeds the acrid heat felt during the immersion, the whole body becomes covered with an abundant inodorous sweat. It is necessary to moderate this sweat in half-an-hour or three-quarters after its appearance, without which it would weaken. This is done by moving about a little, wiping the body, changing the linen, and, finally, by getting up.

Almost always, the perspiration is general. Sometimes, however, there are some parts which do not participate in it. It is principally when a member has been weakened, has diminished in volume after some accident—above all, after prolonged chronic rheumatism—that these exceptions are observed.

Bertrand says he has seen patients in whom the whole of a lower extremity remained free from the colouration and perspiration which the other parts presented. There are cases in which this indifference of a part to the action of the remedy goes off towards the middle of the treatment. When it continues it is rare for the waters to be successful.

There are many bathers who, on leaving the bath, return to their bedroom on foot. Bertrand had never seen the perspiration stopped by this, not even when the weather was cold and damp at the time. The increased action of the solids, principally of the skin, and the expansive effort impressed upon the fluids, he thinks, explain this.

#### STATE OF THE BATHER DURING THE DAY.—BERTRAND.

A mild and agreeable perspiration replaces the abundant sweat experienced during and after the bath; and, if this was properly moderated, in place of finding himself weakened during the day, the patient feels more active [see Dr. Broekwell's letter, p. 20]. The articulations have more flexibility, the skin retains its suppleness and unctuousity, and loses the colour and part of the density acquired during the bath. The appetite is better. The quantity of urine diminishes, unless the skin does not dry, a thing which is rarely observed.

Among the bathers there are some who do not keep to any special regimen; such are the patients affected with rheumatism, ankylosis, distortions, &c. Others, especially the peasants, carry their carelessness to the point of entering the bath immediately, or a short time, after a copious meal. Peyronnet had observed long ago, and Bertrand says he has also remarked, that these persons do not get any indigestion. He says they certainly would not be so exempt if the temperature of the bath *were less* elevated.

STATE OF THE BATHER DURING THE CONTINUANCE OF  
TREATMENT BY THE GRAND-BAIN.—BERTRAND.

The duration of treatment is from ten days, at the least, to from eighteen to twenty at the most. It is during the three or four first days that the abundant sweats appear. The following days they diminish in a remarkable manner. Some patients, nevertheless, continue to sweat much. It is best not to give such persons orders to bathe, except from day to day, and to diminish the duration of the bath: a contrary method makes them very weak.

From the third to the eighth day, the pains, especially those due to rheumatism, increase in intensity. Sometimes they become intolerable. Bertrand had seen some persons affected with neuralgia, suffering very little, or even not at all, at the beginning of the treatment, cruelly tormented after the first baths. This is a reason for *insisting* on their use. Observation shows that this exasperation is a certain presage of a cure—it is the *avant-courier* of a crisis or of a salutary effort. Sydenham said “*dolor amarissimum naturæ remedium.*” When, following upon a long suppressed rheumatic affection the limbs are

benumbed, weak, or impotent, it is not when the pain comes on that it is necessary to despair of a cure. The physician imbued with this truth, in place of joining in the discouragement of the patient, will give him hopes, nearly always confirmed by the result of treatment.

The increase of force set up by the first baths does not last more than a few days. It soon diminishes, to be replaced by a new energy after the treatment. But while the treatment lasts the patients become pale, and some of them lose flesh. In general they are thirsty; they experience a feeling of dryness and of internal heat, especially if the weather is dry and hot; the skin is pleasant and moist; the *body more sensible to cold*; the mucous secretions, the pulmonary especially, notably diminished, and the alvine excretions less frequent. Bertrand says he does not seek to diminish the dryness and the confinement of the bowels unless the constipation is obstinate.

#### THE SEMICUPIUM, AND LOCAL OR PARTIAL USE OF THE BATH.—LAVIALLE DU MASMOREL.

Sometimes when, as in cases which call for bathing the lower parts—for instance, in rheumatism, gout, paralysis, &c.—the existence of a weak chest in the patient forbids us to order complete immersion in the usual way, instead of the customary bath, we should have recourse to the semicupium, or half-bath, which is administered in the following way:—The upper parts of the body which are not immersed are clad in a light garment. When the time fixed for the semicupium is over, this garment is taken off, and the patient is immediately immersed up to his chin. As soon as the whole skin has been wetted, the patient leaves the bath, and is put through the regular



course of subsequent treatment already described. In this way the semicupium produces as profuse a perspiration as the whole bath. The local or partial bath *without subsequent immersion* very seldom produces general perspiration, although it does so occasionally.

CERTAIN MISCHANCES RESULTING FROM THE USE OF THE  
HOT BATH, AND THE METHOD OF TREATING THEM.—  
LAVIALLE DU MASMOREL.

The general potency of the baths in inducing perspiration is sometimes neutralised by some peculiar state of the patient. A patient of this class does not generally perspire at all, but remains dry and cold in the parts especially affected, after the most powerful means known have been tried to bring about perspiration. As soon as a case of this kind is recognised, recourse must be had to *temperate baths, and to diluent draughts* freely given, and this course must be steadily followed for some time. Then—when the parts which refuse to perspire are the chief seats of the mischief—while this resolvent process is going on, and they are much swollen and painful, gentle frictions and irrigations, or douches, are especially ordered. When, by means of this effective preparation, the skin is thought to be sufficiently softened and its pores properly open, a hot bath is tried once more, and generally with complete success. Sometimes, while the sweating process is proceeding rightly, the bathers suffer from giddiness, difficulty of breathing, heat, fever, and hæmorrhage. These disorders should be met by bleeding, mild aperients, and the use of diluent and cooling prescriptions.

If, however, these and like disorders, and especially



diarrhoea, have originally been caused by the perspiration being too scanty, too long suppressed, or too suddenly checked, the next bath, by renewing the normal flow of perspiration, generally disperses them entirely, and restores matters to their proper course.

#### BATHS.—BOUDANT.

These are of two sorts, water-baths and vapour-baths. The first are administered in two ways—short and hot, at the natural temperature; or graduated as to time and temperature according to the judgment of the physician.

Boudant's account of the effects of the baths, half-baths, and douches, at the natural temperature does not differ from that of Bertrand. But he says that the hot baths at their natural temperature are less frequently used now than formerly. They are taken in the gallery of the Pavilion and in the troughs of Ramond-Rigny; most of them in half-baths. (See Boudant's remarks, pp. 44, 45.)

#### “CÉSAR” BATH.—LAVIALLE DU MASMOREL.

(See Table II., pp. 46, 47.)

A single sentence might comprise all that there is to be said about Cæsar's Bath, for the similarity of its waters to those of the Grand Bain is so exact that they differ only in one detail of small importance, viz., *the temperature* of the water, which, as already noticed, is 2° R. higher than that of the Grand Bain, the temperature of which is 35° R., while that of César is 37° R [= 110·75° Fahr. and 115·25° Fahr.]. For this reason the time spent in César should be rather less than that

in Grand Bain, and its use is generally forbidden unless preceded by some use of the Grand Bain. The latter is accordingly preferred in certain disorders resulting from tension and stiffness of the solids; whilst on the other hand, when we have to deal with a partial want of tone and a general dull state of the sensations, the palm must be awarded to the use of César.

It should, however, be added that in all disorders (except such as arise from general debility) which require treatment by hot baths, it is highly important to have a preliminary course of baths at home, for by this useful preparation the body is marvellously predisposed to a more ready reception of the mineral waters, their transmission into the most inward parts of the system, and a safer and milder experience of their peculiar efficacy.

#### TEMPERATE BATHS.—BERTRAND.

These are prepared by mixing the thermal water directly after it has been received into the bathing-rooms with the same water previously cooled. (In former times the water of the Dordogne was used, which of course diluted the mineralisation.) These baths are graduated according to the indications. They last from three-quarters of an hour to an hour.

The temperate bath—to the exclusion of the Grand Bain—ought to be prescribed for patients in whom the nervous system is delicate and sensitive, and the fibre dry, and to those who are of a bilious and melancholic temperament. They may also be sometimes ordered *after the douche*, when the use of the Grand Bain is not allowable.

They may also be used to prepare some patients for the baths taken at their natural temperature. Before allowing them to go into the latter the heat of the temperate baths is increased each day, in such a manner that the bath which preceeds the immersion in the Grand Bain may have a temperature of  $104.0^{\circ}$  Fahr.

The breathing is not sensibly incommoded in the baths of  $36^{\circ}$  C. ( $= 96.8^{\circ}$  Fahr.); the pulse is slightly quickened; the patients are hardly excited when they come out.

At a higher temperature they participate more or less in the effects of the Grand Bain.

In general they stimulate the skin, clean it, produce dilatation of the vessels which penetrate it, strengthen muscular action, and supple the joints. They are suited to second the action of the waters taken internally. Moreover the skin becomes less unctuous in them than the Grand Bain, and the perspiration which they provoke rarely amounts to a sweat.

The cutaneous tissue after immersion in the temperate baths is very far from having that exaltation of energy which the Grand Bain produces. Hence it is necessary in leaving the water to guard carefully against the impression of cold. A large woollen cloak applied immediately upon the skin answers this purpose very well at the same time that it sustains the stimulation produced by the bath.

When the temperate baths constitute the basis of treatment, it is sometimes advisable to excite more powerfully by one or two hot baths, and to return in due course to the first. The cases in which the temperate baths are useful are not at all rare, their utility is real and their action incontestable. Still Bertrand attaches

far more importance to the hottest baths, as already stated. (See p. 44.)

It is above all in the choice and graduation of the baths that judgment ought to be shown. I insist upon this point, says Bertrand, because in it consists the secret of the cures. Be attentive to the effects which they produce, as much internally as externally; modify their temperature and their duration; let them be partial or general, according to their effects. Prepare the skin little by little for a sharper stimulation; especially take care how you subject it too roughly to a strong excitement in chronic inflammations with slight frequency of pulse, and an external temperature above the normal. If the patients are dry in the interval between one hot bath and another, transfer them to the temperate baths.

*Medication by the Douche* is rich in resources, and when its revulsive effect is desired apply it as far as possible from the part affected; consult the sympathies; fully recognising the cause, do not overstrain the stimulation by a too prolonged action.

The baths, the douches, the waters for drinking: these constitute the whole medical armoury of Mont Dore. The inventory is not long, it is true! but with this little list of means you have a thousand combinations.

Bertrand points out very wisely that patients are apt to suspect that the temperature of the temperate baths is not correct (some being more sensitive or fanciful than others as to this point). With the Grand Bain such complaints may be disregarded, because it is used at its natural temperature, and they must take it as they find it; but when the temperature is dependent on artificial interference, he thinks it advisable to let each patient be

able to verify it for himself; and he describes a thermometer which he invented for the purpose, having a range limited to the minimum and maximum permitted for each bath, placed so that the patient can watch it. A very good arrangement.

#### TEMPERATE BATHS.—BOUDANT.

The hot water of these baths—of which the temperature is graduated at will—comes directly from the César and Madeleine springs; the cold water is furnished in part by the gaseous spring of St. Marguerite (the rest from the Dordogne river, from which formerly it was all taken). They are, as already stated, used much more frequently than heretofore, and agree better than the hot baths with persons in a state of sanguineous plethora, with the weak and impressionable, especially women. (See pp. 44, 45).

Their duration is about three quarters of an hour, with or without douches.

They often serve to prepare susceptible patients, and enable them to go on into the Pavilion in the course of a first, and especially of a second treatment.

Their first effects upon the economy are much less marked than those of the Pavilion. The pulse is rarely elevated, and soon becomes calm; in place of general excitement there is an agreeable lassitude. The only marked phenomenon is a little oppression, which it is possible to avoid, and which, in any case, may be moderated by getting into the water gradually.

As to the secondary effects, these baths produce a gentle and moist heat on the skin without any ex-



aggerated sweating. Nevertheless, as the skin is each day congested by the mineral constituents of the water, sometimes abnormal eruptions and, exceptionally, slight thermal fever supervene.

By means of inhalations added to this temperate balneation, the treatment is prolonged five or six days beyond that of the Pavilion. About the twentieth or twenty-first day, the effects of the organic mineralisation are less felt—the treatment is sufficient. Exceptionally it is prolonged still further, if, during its course, there have been days of interruption.

#### PISCINES.—BERTRAND.—BOUDANT.

The Piscines are gratuitous. They ought to be considered as hot baths in which the patients should only remain a very short time. This mode of balneation, so much thought of in many thermal establishments, is not in favour at Mont Dore. It is only followed by the necessitous patients, and reserved for the indigent hospital patients. Their effects are much the same as those of the Pavilion, only they are less accentuated, and require less careful supervision.

#### FOOT-BATHS.—BERTRAND.

It is not only for external affections of the lower extremities, atonic swellings or relaxation and weakness of their articulations that the foot-baths are employed at Mont Dore.

Bertrand says he has used them with success for many years in a great variety of cases. Thus their use, combined with the drinking of the waters, generally produces good effects in suppression of menstruation,

in vicious determination of the fluids to the principal viscera, and in irritative concentrations of which they are accidentally the seat. Many times he has seen obstinate headaches, long standing coughs, and chronic affections of the digestive organs, disappear after a painful swelling with the aspect of gout has supervened on the use of the foot-baths. Constantly they produce real benefit when the blood and the heat, unequally distributed, seem to abandon the lower limbs, and to go to them in less quantity than in a state of good health. But not only is their use not always necessary; there are cases in which they are contra-indicated. Thus it is necessary to interdict them in leucorrhœa, in menorrhagia, and above all at the approach of the menstrual period.

These baths are taken after food, as nearly as possible at the natural temperature of the waters. Their duration should be six or seven minutes. The local irritation, the coloration, and the heat of skin which they determine sometimes last for twelve hours after the immersion. There are circumstances in which it is proper to take them two or even three times a day. It is not uncommon for the toe-nails to turn black from the effect of the iron in the waters acting on the acid sweat of the toes.

#### DOUCHES.—LAVIALLE DU MASMOREL.

Shower baths, irrigations, and other water applications, or to give them their usual name abroad, *Douches*, are also frequently used at Mont Dore for treating various parts of the body when required in special cases. They are given in such a way that, immediately before

taking a bath, the water passing through a pipe, made for the purpose, and falling from a height of about 3 feet, is thrown against the affected part for about six minutes. Afterwards the whole body is immersed in the usual way so as to promote perspiration, which, without this combined use of the bath and douche, could hardly be expected.

These douches are considered more powerful than the ordinary bath. The downward impetus of the heavy fluid has a more penetrating effect on the body, acts more powerfully on the solids, relaxes the humours, which feel its impact more effectually, and sets them flowing freely, and then causes a more abundant stream of the vital fluid to find its way to the parts thus roused into action.

The confirmation by careful experiments of the above statement causes these douches to be regularly prescribed for numbness of the limbs, paralysis, rheumatism, ankylosis, resolveable indurations, recent gout, and other kindred maladies. The douches are also ordered as a useful and effectual means of obtaining the complete advantages of the baths when they would be useless if taken alone, and of thus getting the full value of the waters as an outward application.

Their application must not be made at random to all parts of the body. The use of douches is forbidden on those parts which cover the viscera, the sutures, and the more delicate and sensitive organs. Accordingly, with patients who are deaf, or rather hard of hearing, or who have singing in the ears, the water is only injected into the external auditory meatus. When there are rheumatic cranial pains it is the sides of the head that are submitted to the falling stream of water, particular care being

taken to avoid the sutures ; and in paralysis the entire length of the spinal column is thus treated, but the head itself is carefully left untouched.

Besides this special interdict with regard to the douches, there is a general prohibition against their use in all cases which are unsuitable for the bath treatment.

Note must be taken of the fact that the pains always break out afresh during the use of the douches, though they are alleviated again when the next day's bath is taken. For this reason, when douches are prescribed they are generally only given on alternate days, and baths are taken in the intervals. This alternate inducement and alleviation of pain is an almost necessary condition of success; if it is not produced, marked good cannot be expected from the external use of the waters.

#### THE DOUCHES.—BERTRAND.

The height, volume, form, and direction of these have all been calculated and provided for. In height they vary from 5 metres (about 16 feet 5 inches) to  $2\frac{1}{2}$  metres (about 8 feet  $2\frac{1}{2}$  inches). One set are ascending; the other descending. The ascending have a simple jet; the descending have a rose jet. The weakest are 9 millimetres in diameter (0·35433, or about  $\frac{4}{10}$  of an inch); the strongest are about 3 centimetres in diameter (1·1811, or about  $1\frac{1}{5}$  inches). The water destined for the douches of the Grand Bain is raised into a trough by the aid of a pump. Those of the bath-rooms and of the piscines, to the number of 29, are supplied by the waters from the reservoirs of the César bath.

The douche is directed upon all parts where some advantage is to be expected from its immediate or mediate



action; upon the head, upon the chest, upon the abdomen, according to the indications. When there is coldness of the lower limbs, unless there is some contra-indication, they may be submitted to the action of the douche, and almost always with success. Nor is this the only circumstance under which the douche may be successfully used as a revulsive.

To M. Peyronnet, Bertrand's predecessor, the frequent use of the douches at Mont Dore is due. He employed them upon the spine, with marked success in some neuroses of the genital organs, and especially in the general debility and exhaustion following solitary and precocious indulgence, or the abuse of venery. Under these circumstances the douche often restores a vigour prematurely dissipated.

The douche reddens the parts which it strikes; sometimes, even, it produces small ecchymoses. It stimulates the fibre more and more, and by this action it favours the resolution of some tumours and of divers impediments and adhesions of the articulations.

The duration of the douche is ordinarily about a quarter of an hour if it is received upon a single point.

Bertrand says he distrusts prolonged douches, and if necessary could report many observations which have moved him to this mistrust. The excitement which the douche produces, if it is carried too far, defeats its end. When this excitement is moderate, the shock is salutary; the tone and the vitality of the solids increases. If it is too strong, it bruises them, irritates them, determines an afflux of humours to them, so much the more serious in its consequences that, in general, the parts douched are weak, and offer less resistance. Nevertheless, patients are not wanting who insist upon demanding prolonged



douches. If these are allowed to have their own way, an unhappy experience soon undeceives them, and teaches them that indolence is good for nothing.

Bertrand has often seen the douche disperse enlargements of joints produced by gout, or rheumatic gout. In this case it is not without example for a single douche to restore to an impotent patient the power to walk. "But it is necessary to be on our guard against these *miracles*, and not lightly to give oneself up to the attempt to multiply them. Thus, we cannot too strongly interdict the employment of the douche, if, in the state of which I speak, the head, the chest, or the viscera of the abdomen are painful. Probably we shall restore the use of the limbs, but only by displacing the morbid principle the presence of which occasioned the defect of movement. Hence a veritable retrocession, of which it is easy to foresee the gravity."

When we have good reasons for accusing gout of the disorders of which an organ is the seat, all the efforts of art should tend to call it hence (to bring it out). All physicians who have seen diseases otherwise than in books and systems are assuredly in accord on this point. But if the gout already shows itself externally, to induce it to recede and compromise the viscera would be strangely to wander from sound practice. Observation and reason combine to found a law never to prescribe the douche if acute symptoms still accompany the gouty affection, if, above all, pain and fever persist.

There is another sort of articular embarrassment which it is necessary carefully to avoid attacking with the douche, viz., enlargements developed under the influence of a syphilitic affection of long standing. The

increase of the pains during the night may already have made us suspect their nature; but that which completely reveals it is their exacerbation *during the bath*, which is peculiar to pains dependent upon this cause. The douche *always* aggravates these enlargements, without any good resulting. Such also is its mode of action upon syphilitic nodes.

Doubtless there are other pains the aggravation of which appertains to the douche, but in these, as already pointed out, the aggravation scarcely extends beyond the time of treatment, and a cure, or a very marked relief, results from it.

At Mont Dore the douche always *precedes* the bath, if both are prescribed. This method has advantages which Bertrand thinks incontestable. Thus, the douche produces a local febrile movement, increased by the general febrile movement set up by the bath. This exalts the functions of the skin and of the lymphatics. The douche strengthens the action of the parts upon which it is directed, impresses a new oscillation upon the vessels, in some cases slowly traversed by the fluids accumulated there, and diminishes the stagnation of these fluids.

Moreover, it is not advisable to expose the whole body in a state of perspiration to the action of the air and to the shock of water sensibly cooled, as we should do if the douche were used after the bath.

#### DOUCHES.—BOUDANT.

Douches have such a remarkable advantage in the treatment of a diversity of external complaints, and of many internal diseases, that at the present day it

would be impossible to practise medicine at Mount Dore without their assistance.

They are ascending and descending; the ascending are scarcely employed except in cases of obstinate constipation, or to correct certain intestinal weaknesses connected with chronic diarrhoea.

As to vaginal douches, we no longer follow the ancient system, which was defective and apt to be dangerous. Now, the sort of irrigation useful in leucorrhœa and uterine catarrh is given quite simply in the bath, with a clyster syringe or with the aid of a long tube of caoutchouc adapted to an adjustment of the douche. They ought to be short and of only moderate force, rarely taken in a single stream, most often with a rose with an oval canula perforated with holes. For greater security, when the neck of the uterus is gaping and flabby, the hole in the middle of the oval end should be stopped, so as to prevent the water from being projected directly into the womb, lest it might traverse the Fallopian tubes, penetrate even to the peritoneum, and set up a fatal inflammation, of which examples have been reported.

The descending douches are placed above each bath; their pressure is of 3 mètres (= 118·11237 inches) in the Pavilion, about 7 mètres (= 275·59553 inches) in the Grand Hall, and 9 mètres (= 354·33721 inches) in the North Gallery.

Like the ascending douches, the volume and form are very variable, sometimes they proceed from one jet sometimes from many, and at other times in a shower, sometimes in a great jet by raising the main tube of the adjustment.

By means of an elastic-gum tube, the douche may

be carried in all directions—perpendieular, oblique, lateral, aseending—aeording to indieations. In the treatment of granular sore throat, of hypertrophied tonsils, catarrh of the Eustachian tube, chronic eoryza, otitis with otorrhœa, etc., pharyngeal, nasal and aurieular douches, which are for the most part irrigations, combined with a descending doueche on the nape of the neek, have great value as topical agents aeting directly upon the affected parts, and also as revulsives.

The douches are taken in the bath rooms, most often *before* the bath, which soothes and relaxes the parts which have been bruised. In the treatment of bronchial affections in the form of asthma, otherwise treated in the Pavilion, a demi-bath is taken a quarter of an hour before the doueche, in order to relieve the respiratory passages quickly; then the doueche for five minutes; during the last quarter of an hour the entire bath.

#### VAPOUR BATHS AND VAPOUR DOUCHES.—BOUDANT.

We consider this double medication under one heading, because the vapour bath is rarely employed without the vapour doueche. The rooms set apart for their use are in the inhalation and pulverisation establishment.

Reserved specially for the treatment of rheumatic affections, these baths, and above all the douches, are useful when the disease is of long standing, and when there is debility and atony. In museular and fibrous rheumatism, in articular rheumatism with swelling and engorgement of tissues; in white swellings, stiff joints, anchylosés, hydrarthroses, coxalgia, seiatica, intercostal neuralgia, pleurodyne, lumbago, and other affections dependent upon the morbid principal of rheumatism; in

certain affections of the chest—such as bronchitis under the form of asthma—and old catarrhs—this is a powerful means of sudation and of derivation, to free the air-passages and call the rheumatism to the exterior: in fine, to conjure up these effects when the inhalations are insufficient.

This thermal practice calls for much care and attention on the part of the physician. In order to avoid accidents, he must assure himself beforehand that there is no disease of the heart or disposition to cerebral congestion or apoplexy.

The duration of these baths, with or without the douche, *is very short; ten or twelve minutes, rarely a quarter of an hour.* The vapour douche has precious advantages when pain, which it generally soothes, is the dominant element; the contrary being the case with the *douche of water*, which in falling strikes and more or less contuses the parts in which are contained the suffering nerves, as in sciatica, intercostal neuralgia, precordial pleurodyne. In this last complaint it is necessary to take great care that the douche is not given perpendicularly, but very obliquely, gliding over the region of the heart.

#### INHALATIONS OF VAPOUR.—BOUDANT.

Better known under the name of “aspirations,” these inhalations have been employed at Mont Dore since 1833. Before that time, that careful observer, Michel Bertrand, had remarked that the vapour of the hot baths of the Pavilion and of the douches of César produced a marked improvement in certain patients affected with chronic bronchitis under the form of asthma, with phthisis, and old-standing laryngitis with more or less alteration in the



timbre of the voice. (See p. 44.) Very soon a place was provisionally set apart, by his instrumentality, for the practice of inhalation.

This vaporarium was at first placed in a circumscribed space. The success exceeded all expectations; more spacious accommodation soon became indispensable. At last, under the administration of *Pierre Bertrand*, a special establishment was built and put into active work. Three great halls on the first floor are set apart for inhalations, and two others in the lowest story are devoted to the patients of the hospital and to the less easy classes.

“In these halls, considered as an almost indispensable complement to the therapeutics of Mont Dore,” exclaims M. Boudant, “what divers, and often serious, affections are found collected! Nothing is more satisfactory than to contribute to the extraordinary relief experienced by the asthmatic or emphysematous, with whom the oppression and suffocation are dissipated as by enchantment. What a delightful impression for the patient affected with dry bronchitis—irritative and spasmodic—to feel the respiratory passages soothed and moistened by this beneficent vapour! and for those affected with chronic inveterate catarrh—who are only able by the aid of repeated and fatiguing coughing, painfully to get up some viscous and adhesive sputa—to be able to expectorate freely and easily. Even the unhappy phthisical invalids—panting, exhausted by fever, and at the end of their strength—feel as though re-born and called back to life in contact with these inhalations, which heal the caverns in their lungs; while with others, less advanced, the topical action of the vapour combined with the other thermal medications, conduces to the resolution of the congestive and peripheral irrita-

tion set up by the presenee of tubereles, either erude or passing into the softening stage."

"These physiological manifestations can only be explained by the direct action of the vapour immediately upon the affected parts. The substances of which it is composed generally produce immediate relief, often an amelioration approaching a cure, and sometimes real cures in organic lesions which appeared hopeless. It is certain, at all events, that out of the four or five thousand persons who each year come to breathe in these halls, we do not find ten who go away discontented. But it ought to be added that the greatest precautions are taken to attain the best results, and to avoid accidents. The patients are carried in *sedan chairs* to the drinking fountains, from there, into the halls; after they have remained in them the prescribed time they are carried back to the fountain in the same fashion, then to a bed, previously warmed, where they ought to remain one or two hours for the purpose of a moderate diaphoresis."

The time for remaining in the aspiration halls is from a quarter to three quarters of an hour. As with the douches, the patients find themselves so comfortable that, in spite of our prohibitions, they try to find some excuse for remaining an hour or more. Many fancy they shall reap a great advantage by placing themselves close to the tubes from which the vapour issues. "*A la rigueur*:" the old asthmatic and catarrhal patients are permitted to take this place which is imperiously forbidden to the phthisical and hæmoptie.

Formerly there were steps; these have been removed, because some imprudent patients preferred to place themselves upon the highest of these, where the heat and rarefied vapour were injurious.

The temperature of these halls is  $30^{\circ}$  C. ( $=86^{\circ}$  Fahr.). The inconveniences of the life in common are encountered every day. Some complain that the heat is too great, others do not find it sufficient; the more timid—the women especially—fearing draughts—will not allow the two ventilators to be open, and insist on having only one open; some hold that they ought all to be shut. Every moment there are complaints that there is too much vapour or that there is not enough!

The only answer to be given is, that it is necessary to submit to the rules. For those persons who fear too great a heat, the best way to avoid it is to perform their aspiration exercises about four or five o'clock in the morning, or to breathe in the little side-halls.

Among the inconveniences of too long aspirations, there is one—which would be much more frequent if it were not prevented or moderated by the *foot-baths*, which are assiduously taken *each* day—this is an uncomfatableness about the head like a slight drunkenness with tendency to sleep. The action of the carbonic acid gas is the principal cause of this, as well as of the sedative effect on the pulmonary organs, which nevertheless are sometimes *excited*. These epiphenomena scarcely occur after the first week, generally they are devoid of importance; if they are too intense the aspirations must be shortened or suspended. An aloetic or other aperient is very useful if there is constipation.

Sometimes, also, the aspirations dispose to blood-spitting. If moderate this need not occasion uneasiness, and is often salutary. Nevertheless it requires cautious watching by the physician; if the sanguineous expectoration is too abundant the aspirations should be interdicted or replaced by the *pulverised water*.

## PULVERISED WATER.—BOUDANT.

M. Boudant says that, although at the time pulverisation was introduced to the medical world by M. Sales-Girons, Mont Dore was already richly provided with means for treating affections of the respiratory organs, it is nevertheless true that patients disposed to hæmoptysis or cerebral congestion, or affected with diseases of the heart and great vessels, found themselves reduced to the simple drinking of the waters and to taking foot-baths. It was impossible to dream of letting them be submitted to inhalations, much less to plunges in the water.

The pulverisation of mineral water was, therefore, very soon ordered by all the physicians at this station, as a thermal resource which ought to be specially favourable for the three classes of persons above referred to.

It was soon found that, notwithstanding all precautions and that the temperature of the Madeleine water at 45° C. (113° F.), which was used for pulverisation, was hotter by 27° F. than that advised by Pierrefonds, the patients got chilled from the damp and cold. The coldness of each hall was such that it could be scarcely borne by persons in health. It became necessary, therefore, either to give up pulverisation or to find some means of avoiding these disadvantages. It was at last decided that the only way to remedy the evil was to provide in each hall an inlet for the vapour of mineral water, in such a manner that the temperature could be regulated. *All these difficulties were found to be removed by this expedient*, so that, now, water in snow-like spray is easily breathed. The atmosphere of the hall being hot, the patients, in the intervals of rest from the



spray aspirations, breathe a slight vapour of the same nature as that of the inhalation halls.

General conclusions from experiments prove that spray inhalations are useful :—

1. According to the experiments of M. de Morquay, pulverised water is able to penetrate below the glottis and to be inspired sufficiently deeply into the bronchial tubes.

2. With the aid of the instruments of MM. Charrière, Mathieu, and many others, certain medicinal liquids are employed with advantage in special practice and at the bed-side of patients.

3. In a thermal establishment where the water in powder is shed into a more or less extensive *hall*, the coldness which results from the pulverisation necessarily requires some inlets for heat, to avoid exposing the patients to all the consequences of coldness and damp.

4. By the fact of pulverisation *sulphurous* mineral waters are more or less decomposed, lose their special chemical characters, and consequently their medical properties.

“Returning to our special subject,” says M. Boudant, “and not wishing to treat it otherwise than as relating to Mont Dore, let us see without prejudice what facts and experience have taught.”

1. The spray which results from the pulverisation contains all the mineral principles of the thermal water of the Madeleine.

2. To make this medication easy and advantageous, it is urgent to raise to a suitable degree the temperature of the *Hall*.

3. This method *thus modified* is of real use in the treatment of diseases which have their seat in the



throat and the subglottic region, such as the various species of sore throats, simple or granulated, even when they occupy the glossal, peri-epiglottic or intra-laryngeal mucous membrane.

4. It is also very advantageous in affections of the larynx and trachea, when there is alteration or loss of voice, especially if the complaint is idiopathic.

5. This action is less efficacious and often insignificant in bronchitis of the dry, spasmodic, or catarrhal kind, and in tubercles, either crude, softened or excavated; but in these cases it is fair to bear in mind the gravity of the lesions, their nature, the importance of the organs affected, etc.

6. Water in powder may be employed without inconvenience in bronchitis or phthisis with a tendency to *hæmoptysis* and cerebral congestion, and persons who are at the same time obese, plethoric or affected with diseases of the centres of circulation bear it easily.

7. This medication is of no use, and may be injurious to the asthmatic and emphysematous. For these last nothing can take the place of the *vapour* in the *Inhalations Halls*.

“After this exposition the medical value of pulverisation is no longer doubtful; its application in selected cases is a veritable conquest. With the modifications which have been introduced at Mont Dore the physicians as well as the patients have one more good agent at their disposal.”

#### FOOT BATHS.—BOUDANT.

Foot baths are generally ordered for the patients who follow the exercises of the aspiration and pulverisation halls, to prevent or dissipate the confusion and heaviness

of the head which are apt to occur. As revulsives they are also prescribed in affections of the throat, to free the congested chest and great vessels; repeated each day once or twice for six or seven minutes, these pediluvia, taken at the natural temperature of the water, heat the skin, make it turgescnt, and sometimes call out the rheumatic or gouty principle which had seized upon important organs and embarrassed their functions.

They are to be prohibited, when there are varices in the legs, or œdema, and when the skin is ulcerated, indurated, inflamed; also in uterine fluxes and pronounced leucorrhœa. Their indication is, on the contrary, unquestionable in amenorrhœa and dysmenorrhœa; in fact, whenever the blood goes to the superior parts of the body, and leaves the feet cold. Combined with shampooing, they are useful in the course of strains, indolent swellings of the articulations of the leg and of the bones of the foot. Combined with vapour douches, they stop the course of incipient white swellings; finally, pediluvia are generally most useful when it is desired to give tone and vitality to the tissues. By favouring the capillary circulation, the atonic swelling disappears, and the articulations acquire their normal suppleness.

#### GARGLES AND NASAL IRRIGATIONS.—BOUDANT.

It is very difficult to learn to gargle properly. This means of treatment is recommended in all affections of the throat. Only a certain number of patients know how to use it profitably. Usually those persons who show the deep parts of the pharynx with difficulty, even with the aid of instruments, are also those who gargle

with the least success; all the more if the mineral water touches the front of the soft palate. These patients often have the pillars of the fauces too fleshy, or the base of the tongue strong, thick, and very contractile. In these cases, in spite of their best endeavours, the tongue rises, obstructs the isthmus, and the liquid cannot enter the pharynx. For these patients it will be an important study, easily managed, to practise before a glass. It is requisite simply to keep the tongue back, and to lower it as far as possible at the root; then the isthmus becomes free and the pharynx is shown.

If this difficulty can be conquered these patients can gargle like the others; in the contrary case, many directions are given them and rarely followed. For this reason I recommend them *simply* to use aspirations of water by the nostrils, and with much more success, for often the affection is retro-palatine; or I order them to use the process of Valsalva, which consists in making a strong nasal inspiration while the mouth is full of water; then, the mouth and nose being closed, to perform the movement of swallowing, and at the same time to make a full expiration which sends the liquid in such a direction as to bathe all the walls of the throat.

This proceeding is difficult to carry out, and still more to make people comprehend; that is why I set more value upon the nasal aspirations, and still more upon the proceeding of Politzer, which is suitable at the same time in catarrh of the Eustachian tube and hypertrophy of its anti-chamber.

This little operation is performed with the mineral water contained in a ball of caoutchouc, having at its extremity a canula of gum or ivory. When introduced into the nostrils for two or three centimetres (3 centi-

metres=1.18113 inches), the head is slightly thrown back, the *alæ nasi* are pinched between the two fingers, while the other hand squeezes the ball so as to eject the water with more or less force. By this method the physician is certain that his directions are well carried out. I know that the patients affected with catarrhal deafness are wise enough to submit without difficulty to these sorts of irrigation: others, who are more rebellious, gargle in their own way; for these last I order a little douche, intra-nasal and guttural, with a gum tube, while they are in their bath. In general they prefer this method to that of Politzer, and it is very useful when there are pharyngeal or subglottic granulations.

“The irrigations, according to the method of Weber of Leipsic, modified by the more convenient apparatus of our confrère, M. Alvin, are also employed in similar cases. Dr. Constantin Paul has still further simplified the process by supplying a simple irrigator ‘Eguisier,’ to which we adapt a long caoutchouc tube, terminated by a canula sufficiently large to fill the external opening of the nose; the injection penetrates perfectly in such a manner that the liquid returns easily by the opposite nostril.”

Many diseases of the nasal fossæ are treated successfully with these irrigations; for example chronic coryza, herpetic ulceration of the mucous membrane, foetid ozæna, catarrh of the lachrymal sac and of the nasal duct.

#### THE INTERNAL USE OF THE WATERS.—BERTRAND.

The effects of the waters taken internally are described so much more carefully and minutely by Bertrand than

by any other author, and the accounts given by other authors, so far as they go, are so much in accord with his, that I shall devote the principal space under this head to his descriptions, introducing, however, the statements of later writers where they materially differ from his, and especially when they indicate the modes of procedure at Mont Dore peculiar to the present day.

THE WATERS OF LA MADELEINE ought to be taken in the morning, fasting. (See Table II., pp. 46-51.) They are not to be mixed with the drink at meals (not to be used as "table waters.")

For those who bathe, it is indifferent whether they are taken before or after the bath. Except in the cases where it is advisable to use them with much circumspection, they are ordered in a dose of three glasses, each holding about 7 fl. oz., taken at intervals of half an hour. This interval is prolonged, or the last glasses are omitted, if the first causes fatigue of the stomach.

These waters are administered pure or mixed, according to the indications. Lime-water, milk, eau-de-tilleul, rice-water, solutions of gum arabic, are the substances which, according to need, are used for mixing. Whatever may be the nature of the liquid employed, it is unusual to add more than a tenth.

During the first days of treatment, the waters weaken the legs a little, go to the head, dispose to sleep—against which it is especially necessary to guard after meals. They occasion some nausea, and sensibly accelerate the pulse. Immediately after they have been drunk, a gentle heat is felt in the inside. If there is any internal malaise or pain, they augment it a little. When the waters



agree well, the appetite is strengthened; if, on the contrary, they oppress the stomach, it is deranged; then the patient takes them with repugnance, and the tongue is soon covered with a thick white fur. It is commonly about the third to the sixth day that this phenomenon shows itself. When this happens, purgatives are usually successful; their omission would delay the good effect of the waters; but still, in some similar states, they would be more hurtful than salutary.

In general the waters excite a greater activity in the circulation of the fluids. Thus they hasten, sometimes by eight or even twelve days, the return of menstruation, and they make it more abundant. During its duration, the continuance of the waters disposes to menorrhagia. Finally, issues suppurate more freely, and those which were nearly closed return to their former course.

#### EFFECTS OF DRINKING THE WATERS UPON THE SKIN.—BERTRAND.

The waters sensibly increase the vitality of the skin. A short time after they have been taken, especially if exercise is indulged in, they excite bursts of sweat, which develop into a general and moderate perspiration.

But in all chronic pulmonary diseases it is not only by the dryness of the skin that the derangement of its functions is marked. There are some patients who have sweats limited to the head, to the neck, or to the chest. Others suffer from abundant general sweats, which throw them into a state of great prostration.

It is of good augury if, during the course of treatment, partial sweats are converted into a gentle moisture spread over the whole body; and if, from being profuse, the general sweats diminish and lose their acrid odour and

the sticky character which they often have. Bertrand says he has often seen these happy changes show themselves; but he has also seen, especially in *advanced* cases of phthisis, the sweats rapidly assume the colliquative character under the influence of the waters. When this accident occurs, it is generally an indication of deep and incurable degenerations, and we must not hesitate to stop the treatment. In similar conditions the waters nearly always aggravate the state of the patient with great rapidity.

During, or shortly after the treatment, and by the sole effect of drinking the waters, it is not uncommon for boils, patches of a darts\* aspect, and eruptions of different kinds to appear and relieve the patient. Sometimes also swellings of subcutaneous lymphatic glands, or deposits in the cellular tissue, supervene, and are followed by the same advantage.

#### EFFECTS OF THE WATERS UPON THE EXPECTORATION.—BERTRAND.

There are cases of chronic pulmonary affection which go on for a long time without expectoration. Perhaps the irritation, carried to a high degree, arrests the mucous secretion; or the softened tuberculous matter is enclosed in a cyst, without communication with the bronchial tubes.

In the commonest cases the sputa, more or less abundant, present marked differences in colour, odour, consistence, and nature. The mucous secretion from the lungs increases during the first days of treatment, to diminish in due course, in proportion as the perspiration returns to its natural state. The cough also is less vio-

\* See note pp. 54, 55.

lent and less frequent, and the sputa are more easily removed. The lungs seem to acquire more vigour, and offer more resistance to the fluids, which, on the other hand, flow less to them because the pulmonary excitement is diminished. It is a good sign if the sputa change from a purulent to a mucous aspect, or if they appear without that enormous quantity of viscid, tenacious, colourless fluid which often envelopes them.

But the expectoration does not always take so favourable a turn. If the complaint has acquired deep root, if the waters aggravate instead of arresting it, the sputa become much more abundant, the skin withers and dries, the bowels act too seldom, and fever increases. When these accidents occur, it is necessary to stop the treatment.

It is not to be supposed that the waters cannot have exasperated the symptoms; and if their use is insisted on, they will not be long in bringing about colliquative dissolution by expectoration.

Far from its being the case that the increase of expectoration ought *always* to be considered as an unfavourable sign, there are instances, on the contrary, where it is followed by a cure. But then the other accidents, in place of being aggravated, manifestly lose their intensity. Thus fever and pulmonary irritation are calmed; the skin improves, and opens rather than dries.

It is by the *general* condition of the patient that the physician ought to be guided, without allowing himself to be frightened by an accident, the exaggeration of which is sometimes more favourable than hurtful.

#### EFFECTS OF THE WATERS UPON THE URINE.—BERTRAND.

The quantity of urine is rather diminished than increased by the waters. Their mode of action upon the

cutaneous secretion explains this phenomenon. Nevertheless, there are many patients upon whom they act differently, and who urinate more, a little while after having drunk them. In this case the perspiration is not increased. Bertrand has observed that the waters do not succeed so well when they take this direction. To change this, it is often sufficient to drink at longer intervals, or to give smaller doses; or again, while retaining the full total dose, to give them in half-glasses at a time; or, finally, if there is no contra-indication, to administer some baths as well.

EFFECTS OF THE WATERS UPON THE ALVINE  
EVACUATIONS.—BERTRAND.

If nothing counteracts the tendency of the waters to pass off by the skin, or deranges the manner in which they act upon that organ, the mucous secretions diminish, and the bowels become confined. The alvine evacuations are also less frequent during and some time after the treatment.

Nevertheless, the waters sometimes produce a looseness. If no fever arises at the same time, or if, when it already exists, it is not increased; if the looseness is without gripes; if the stools are not too close together; if the cough and expectoration diminish, without being suddenly suppressed; if, above all, there is no indication of chronic inflammation of the stomach or intestines—we ought to regard the looseness as salutary, and to do nothing either to arrest or to excite it. The waters determine favourable revulsions in different ways.

Bertrand asks, Why crises of this nature should not take place by the intestinal tract? The sympathy that exists between the mucous membranes is known. We see



catarrhal affections convey their impression successively to the nasal fossæ, the lungs, the intestines, and the urinary tract. In exciting a moderate intestinal flux, the waters displace the morbid irritation, and call it to a viscus of large surface, and where it is of least gravity. Whatever may be the explanation, looseness, with the conditions above named, relieves, and sometimes cures, the patient; and that is the main point.

But it is not at all the case that all *looseness* occurring during the use of the waters is salutary. There are two other kinds of looseness, which, on the contrary, are very mischievous, and which it is important to distinguish carefully.

Thus, sometimes the alvine dejections, small in quantity, are almost exclusively composed of greenish-yellow, glairy mucous matters. The patient has two or three stools each day, without tenesmus. This diarrhœa, ordinarily very obstinate, almost always depends upon the presence of small tubercles in the intestines, and to irritation transferred from the lungs to the digestive canal or developed by the tubercles themselves, an irritation increased by the soda-salts which the waters contain (the presence of arsenic was not then known). If the suspension of the waters and the use of mucilaginous drinks does not calm the diarrhœa in a few days; if, after it has ceased, it returns with a resumption of treatment, it is necessary to give up the use of the waters. Bertrand has never observed that this diarrhœa rapidly aggravates the symptoms, or that it becomes more abundant, even when, after it has set in, the waters are not suspended; but it lasts as long as the disease, and shortens the life of the patient.

If phthisis is more advanced, if the intestinal tubercles,



already softened, are upon the point of suppurating, the waters are competent to excite another sort of looseness, much more formidable, and which rapidly carries the patient to the grave.

This sort of looseness comes on all at once, like a flood ; in a few hours the patient passes without pain and without effort many enormous stools, frothy on the surface, and in some of them portions of the last food are recognisable. There is ordinarily more than a day's interval between one fit of this overflow and another. The fever increases, appetite goes, the strength fails, and expectoration much diminishes. Almost always, this looseness announces itself by an amendment of the gravest symptoms, an amendment as remarkable and as sudden as it is deceiving. One would say that the phthisis had left the patient at peace, while this work in the intestines is preparing. The use of the waters should be stopped directly this insidious amendment is recognised. M. Brieu de says of these fits of diarrhœa : "They shorten the days of the patient with a rapidity that no one can conceive who has not witnessed them."

It is probably to accidents of this kind that we may attribute the prejudice, established at Mont Dore, that "the waters are unfortunate when they produce diarrhœa." Far from this being constantly an unfortunate augury, many times, on the contrary, as already stated, it produces the best effects. Therefore, in the treatment of phthisis by the Mont Dore waters, the physician ought to examine with the greatest attention, not only the general state of the patient, but also, the particular state of the different excretions. This will serve him for a guide, whether to increase or moderate the dose of the waters, or to suspend or interdict their use.

## . INTERNAL USE OF THE WATERS.—BOUDANT.

The water is best drunk in the morning and is best borne fasting, especially for persons of delicate, capricious, or dyspeptic stomachs. Usually, the largest dose does not exceed four glasses, rarely five (about 7 fl. oz. to a glass); three in the morning at intervals of half an hour, one in the day one or two hours before dinner; most frequently it is begun in half-glasses or even quarter-glasses, according to the case. In phthisis with tendency to hæmoptysis the quantity ought to be watched with care to avoid over pulmonary excitement and, hence, spitting of blood.

M. Boudant has found some persons with such an intolerance of the waters that even teaspoonfuls could not be borne. In these the internal use of the waters must be given up; and he notes that such patients—content to follow the external treatment only, in half-baths, douches, inhalations, and foot baths—have, nevertheless, found great relief to the respiratory organs.

He specially cautions physicians to begin with small doses till they find the stomach will bear the water.

## CLIMATE OF MONT DORE.—BERTRAND.

Bertrand thinks that the elevation of Mont Dore above sea-level, and the consequent purity and lightness of the air, counterbalance the dangers of its rough climate, considering that it is only in the summer that patients can go there. "It is not in winter that people go to Mont Dore; it is during the hottest months of the year, and when the mountains are cleared of snow, and covered by a vigorous vegetation."

With regard to hæmoptysis, although he thinks it is

not favoured by the climate or by the treatment, he points out that in hilly places there are circumstances which dispose to its return, but which have nothing to do with the quality of the air. These are the irregularities of the country, and may easily be avoided. Thus those suffering from diseases in the chest ought to avoid ascending the hills. He says he has seen patients spit blood at the end of such fatiguing walks, which he attributes to the distress to the breathing and acceleration of the circulation. Patients who are naturally sensitive to the evil effects of transitions from hot to cold ought to guard themselves against these transitions with still more care than usual when they take the baths and waters, which increase perspiration. "Those who go to Mont Dore would be very wrong if they did *not bring with them their warm clothing.*"

#### DIET AND REGIMEN.—BERTRAND.

Bertrand says that the tables of Mont Dore "are served with too much abundance for the patients" (in 1823). The waters succeed much the best when taken on an empty stomach, and when they are not mixed with the residue of a late dinner still incompletely digested. A heavy breakfast disturbs their action, because, in calling the vital forces to the digestive organs, it deranges the work which is going on in the skin. Patients ought to abstain from indigestible foods, from those over-seasoned, and from spirits. Coffee ought not to be forbidden to those long accustomed to its use. It is necessary during treatment to avoid drinks which are too cold or too cooling.

Persons accustomed to generous wines often experience heaviness and derangement of the stomach, lose

appetite, and get a loaded tongue. All these symptoms disappear on changing the wine of the Auvergne, often of bad quality, for wines of a better description. It would be a mistake to confound this state with that which the waters sometimes produce, and which requires the use of aperients, as already stated. "Many complaints," says Bertrand, "disappear without any other remedy than the simple influence of a wise regimen. Without regimen the most suitable treatment will not cure."

#### DIET AND REGIMEN.—BOUDANT.

Boudant objects, as Bertrand did in his time, to the over-feeding of the patients at the Mont Dore hotels. He says, "The patients eat too much; the tables are abundantly served; the dishes, if not recherchés, are habitually of good quality and well prepared. Thursday and Sunday are fête-days; filets, salmon, fine trout, sea-fish, and the famous Vassivière legs of mutton are exposed for the temptation of the guests. During these long meals at the table-d'hôte, served slowly, people give themselves up, if not to their appetites, at least to passing the time by partaking of something off every dish. The stomach is over-taxed by the variety of foods; it becomes fatigued, and the waters do not agree so well. I cannot too much enjoin sobriety upon the patients, to avoid the sauces, and to eat less pastry, although it is of excellent quality. As neither pepper nor mustard, nor acids nor condiments of any kind, are served at the tables, it is not necessary to forbid them. For dessert, the confections of cherries, of quinees, of aprieots and of plums are excellent. As to the fruits of the season, strawberries, cherries, and raspberries are those usually given. Pears, peaches, and aprieots are

seldom served, except for show; they are always picked before they are ripe, in order to bring them in good condition from Clermont.

"The ordinary wine is better chosen and of better quality than formerly. [See p. 105.] Mixed with drinking water, it is very good; this drink suits the stomach and sustains the strength. When it is very hot, the patients like to mix the wine with the gaseous water of St. Marguerite, which is very agreeable and very cool; but it is generally forbidden, because it produces cough and distresses the chest."

Liquors are prohibited. Coffee, from time immemorial, is recommended, especially to asthmatics, and to those who are habituated to its use; it is very well prepared, and of good quality. During the course of treatment, many persons complain of excessive thirst, and ask the physician what they may drink without harm. Boudant recommends water without sugar, with two spoonfuls of coffee, and one of euraçoa to each glass. Of course, these directions only apply to the invalids; others may do as they like.

#### DURATION OF TREATMENT AND HOW THE BATH IS TAKEN.—LAVIALLE DU MASMOREL.

The patients bathe in the very basin in which the water is received at its source. (See Table II., pp. 46-51.) The time devoted to the bath is fixed by various causes, according to the nature of the malady and the constitution of the patient. The normal and customary period *does not exceed a quarter of an hour*. The bath is used in various ways to suit the requirements of the case and the part affected, either by complete immersion, as a



semicupium, or in any other form that may be thought advisable.

As to the number of baths to be taken *there is no absolute rule*; but the course should rarely be continued for more than fifteen or eighteen days. Prudence also forbids their repetition at too short intervals, or their use, at the utmost, more than once in the same day, and then only by those who are blessed with a good constitution.

Half-an-hour before entering the bath about sixteen fluid ounces of water from the thermal spring are ordered to be taken; a like quantity is given again during the bath, and a third like quantity afterwards when the patient is put to bed, in order to perspire.

M. Laviolle du Masmorel thus sums up his treatise, "The Novelty of our System and its Main Points of Difference from Ordinary Treatment:—

"I candidly confess that the method which I have been describing differs from the established treatment recognised by many modern [1768] practitioners; for instance,—as to the quantity of water prescribed for internal use, which is alleged to be too little; as to the use of the warm waters for ordinary drinking, which they condemn on opposite grounds as old-fashioned; as to venesection and aperients, which they declare to be unnecessary; as to prescribing the waters in certain disorders which we exclude from their province,—such as confirmed pulmonary phthisis, and every kind of chest complaint, *when in its last stage*, not excluding inflammations, pure convulsive asthma, and extreme marasmus; as to the use of milk foods both before taking the waters and in combination with the waters themselves (indeed, owing to some preconceived alarm they are afraid to prescribe milk foods at all); as to the

*bathing*, which they think should be post-meridian—the morning hours being best for drinking the waters; whilst on the other hand, according to my plan, as already explained, the baths should be taken in the morning with an empty stomach, the water drinking and the baths being prescribed in conjunction and at the same time; as to the application of douches to the head, which they declare to be highly dangerous, even with the precautions which I have said should be taken; and lastly, they keenly maintain that the waters of the Magdaleine Spring (specially prescribed for drinking), of the Grand Bain and of César's Bath Spring are of quite different natures, in spite of the united testimony of the most scientific chemists, who are the only judges capable of pronouncing authoritatively upon such matters."

#### DURATION OF TREATMENT—GRAND BAIN.—

BERTRAND.

The duration of treatment is from ten days at the least to eighteen or twenty at the most. It is during the first three or four days that the abundant sweats appear: during the following days they diminish in a remarkable manner. Some persons, however, continue to sweat much. It is best to give such patients their orders for bathing from day to day, and to diminish the duration of the bath, or intermit its use according to circumstances.

#### ON THE DURATION OF INTERNAL TREATMENT AND THE ACCIDENTS PRODUCED BY THE ABUSE OF THE WATERS. —BERTRAND.

The duration of internal treatment is about fifteen days (mean). It extends from that to twenty or even

twenty-five days for some persons. It is very rare that it extends to a month. In addition to the particular circumstances belonging to the effects of the waters, the nature of the disease, and the state and constitution of the patients, there are causes of a general nature which modify this period. Thus, when the weather is rainy we are able, without inconvenience, and sometimes we ought, to prolong the treatment. It is necessary on the other hand to shorten it if heat and dryness prevail, especially with a north wind. We see some patients who from the tenth or fifteenth day cannot drink the waters without repugnance. It is advisable to make them stop treatment at once. If this is not done, the patients soon complain of a general malaise: they experience a great thirst, bitterness in the mouth, dryness, heat of skin and restless nights; febrile disturbances supervene and the strength fails. A calm soon returns after discontinuing the treatment. When nothing obliges us to suspend the waters, it is advisable gradually to diminish the dose during the last days of treatment.

Women expose themselves to a prolonged stay if menstruation occurs during the drinking of the waters. Not only is this lost time, but, all things being equal, the treatment succeeds best when it is not interrupted.

There is, in the dose as in the duration of administration, for every active remedy a certain limit which cannot be exceeded without danger. To an excitement of the vital forces erethism may succeed; and among the accidents in its train weakness is perhaps the least grave.

The reasons against a too prolonged treatment are equally opposed to taking the waters again shortly after having discontinued them, or, following the established

expression, "*to making a second season.*" Most often the effect of the waters is consecutive—thus to learn what the waters are capable of doing it is not so much from those who are taking them as from those who have already taken them that we should enquire. Now, this consecutive effect is the result, as Bertrand has already said, of a work more or less secret, going on in the economy. To take the waters again during this work, is to risk upsetting it.

Some persons take the waters out of all proportion to the proper dose. These extravagances are not uncommon among the peasants. They make a point of seeing who can drink the most. It is vain to try and show them the danger of such an abuse. The sense of their strength and an unreasoning incredulity prevent their being stopped in these practices, which would be simply ridiculous if it were not that, sometimes, the consequences are very grievous. The disorders which result are not slow to show themselves. These are, intestinal troubles, gripes, serous and sanguinolent dejections, tencsmus, etc., accidents, the violence of which is in proportion to the abuse of the remedy. The skin becomes dry, the pulse small, hard, irregular and hurried, and the respiration difficult. All the evacuations, the expectoration especially, are suppressed or notably diminished. Bertrand has seen some patients, in this state, present all the symptoms of the most acute intestinal catarrh. Leeches, mucilaginous drinks and lavements, fomentations, emollient poultices and tepid baths, are the means from which most success is obtained. They re-establish a calm in a few days, if the individual is free from serious chronic diseases. In the opposite case, the danger is proportionate to the pre-existing complaint.



## DURATION OF TREATMENT.—BOUDANT.

The mean time for the Cure is about eighteen days. The treatment is a little longer at the present time, because the medication of the Pavillon is less exclusively employed. (See Table II., pp. 46-51.)

If the Pavillon balneation is alone used, fifteen to sixteen days are sufficient; if combined with the *temperate* baths, eighteen days; if temperate baths are alone used, twenty-one days. If a rest has to be taken from any reason in the course of treatment, it may be prolonged to twenty-five days, or even a month.

Excepting some modifications, the Cure is carried on without interruption; very rarely it is divided into two periods. "In our busy epoch time fails us!" In this last case it is necessary to make the interval extend to three weeks or a month so as not to disturb the organic work of the "*first season*," which is not longer than twelve or fifteen days. (See p. 110.)

This mode of procedure is best for feeble, debilitated persons, having at the same time a very excitable nervous system. Boudant says:—"I also often order it in catarrhal deafness, in order to avoid over-excitement of the acoustic nerves, and the ear-aches which may result—passing inconveniences, it is true, but which, in their turn, are a fresh cause of buzzing and of hardness of hearing.

"When the heat is moderate and the weather a little dull, the waters are much better borne. If it is heavy and thundery, they ought to be taken in small doses, and the baths less prolonged; otherwise an agitation comes on, sleep is lost, and symptoms of gastric disturbances show themselves, circumstances of which it is necessary to take



notice during the course of treatment. In general it answers better when a little shortened than when prolonged. In the latter case, towards the end, all the thermal practices are gradually diminished, in order to avoid an over-excitement which might go on to erethism.

“The baths are positively forbidden during the menstrual period; the attempts which have been made to continue them have been far from successful. This is why we advise women who have no time to lose to take such precautions as to come immediately after the cessation of menstruation. Under any circumstances, the waters may be drunk and the aspirations used without inconvenience.”

ON TRANSPORTATION OF THE WATERS.—LAVIALLE  
DU MASMOREL.

It is not only at their actual source, or in the village in their immediate neighbourhood, that these waters exert their salutary properties. But when carried to a considerable distance, in vessels as far as possible impervious and properly stoppered, they produce their effects with efficacy, rapidity, and impunity, as has been proved by experiments made at a distance of a hundred miles or more.

The only difference observed in their action is that, when transported to any considerable distance, their introduction into the system is not quite so rapid, and they cause less copious perspiration, and, consequently, a freer discharge from the kidneys. The more eminent of the physicians who have studied these waters are in the habit of prescribing them—when thus transported from their native springs—in quantities larger by one-fourth; first slightly warming them in a water-bath,

no particular care being taken as to the exact restoration of their original temperature.

ON TRANSPORTED WATERS, AND THE MANNER OF  
TAKING THEM.—BERTRAND.

Those patients with whom the waters taken at Mont Dore have been successful, especially the subjects of pulmonary catarrh, do wisely to take them again at the beginning or in the course of the succeeding winter. This adds to the amelioration already experienced, and makes it durable. Bertrand says he has known persons who, two or three months after a season at Mont Dore without any apparent good result, were quickly cured by the use of the transported waters. The first treatment had impressed a salutary modification on the patient, and prepared the way for the cure.

The waters of Mont Dore keep a long time without any decomposition perceptibly altering their medicinal virtues. Bertrand particularly observed that at the end of two years it was impossible to distinguish them from those which had just been drawn. But to this end it is necessary that they should be kept in vessels containing *not more than one glass*, and that they should be well corked. This precaution has the double advantage that it diminishes as much as possible the effect of the chemical reactions between the principal constituents of the waters, and ensures at each dose a uniform composition. Finally, before they are drunk, it is necessary to raise the temperature to its natural degree (See Table II., pp. 46-51). The waters at Mont Dore are sent out in bottles holding 2 decilitres (= 200 grammes, or about 7 fl. oz. = "one glass").

It matters little where the waters are kept, so that they are not exposed to the action of great heat or of freezing.

Before the water is drunk it ought to be warmed in a water-bath, having a temperature of  $48^{\circ}$  C. ( $= 118.4^{\circ}$  Fahrenheit). This temperature is greater than that of the springs, but the temperature of the water contained in the bottles will be  $5^{\circ}$  or  $6^{\circ}$  C. lower than that of the bath ( $43^{\circ}$  or  $42^{\circ}$  C.  $= 109.4^{\circ}$ ,  $107.6^{\circ}$  Fahr.). The bottle ought to be opened at the moment of drinking. It is rare, among a number of bottles, not to find one in which the water is more or less altered. This can be recognised at once by the black colour of the cork and the smell of rotten eggs exhaled by the water. Such water must be thrown away.

In ordinary cases Bertrand gave the transported waters for twenty-one days, in the following doses:—

	BOTTLES.
1st, 2nd, and 3rd days—2 bottles each morning, taken fasting, with an interval of half an hour between each.	6
4th, 5th, 6th, 7th days—3 bottles.	12
8th, 9th, 10th, 11th, 12th days—4 bottles.	20
13th, 14th, 15th, 16th days—3 bottles.	12
17th, 18th, 19th days—2 bottles.	6
20th, 21st days—1 bottle.	2
	—
	58

This plan has the double advantage of gradually accustoming the stomach to the use of the waters, and of not stopping them abruptly.

(Thus, 58 bottles, of about 7 fl. oz. each, are taken in 21 days,  $=$  about 20 imperial pints and 6 fl. oz.)

At the beginning of treatment it is often advisable to give the waters in smaller doses, and sometimes even to mix them with milk, rice-water, or solution of gum arabic, &c. All this must be dependent upon the nature of the complaint, the symptoms which it presents, the state of the patient, and the effects which the waters produce. These effects ought to be observed carefully; it is by them that we must judge whether to diminish or increase the dose of the waters, to suspend them, and return to them a little later, or to give them up altogether. We ought not to hesitate to take the latter course when, *in diseases of the lungs*, and under the influence of the waters, either the stools, the sweats, or the sputa tend to become colliquative. (See pp. 97-105.)

It is necessary, moreover, to follow the same regimen and precautions, when taking the transported waters, as when drinking them at the springs.

#### ON TRANSPORTATION OF THE WATERS, AND ON MINERAL WATERS DRUNK AT HOME, ESPECIALLY AFTER A THERMAL TREATMENT.—BOUDANT.

The thermal treatment at Mont Dore is, as we have seen, of the most serious kind; and the diseases to which it is applied, often of a grave nature, are subject to returns; so that, after this medication, the patient must consider himself as a convalescent, and be upon his guard to avoid relapses.

An appropriate hygiene is more especially needed when, during the cure, no crisis has been produced, and little or no amelioration.

All is not lost for these patients. Often enough, in

these cases, it is not till twenty or thirty days afterwards that the secondary effects of the alterative and substitutive medication are felt.

Above all, *when the effects are immediate*, it is urgent not to disturb the molecular and interstitial work in the organism, which lasts from four to five weeks after the cessation of treatment.

“During this lapse of time take no active remedies, unless absolutely necessary. The regimen should be simple, although substantial and nourishing. Carefully avoid the cold and damp of evenings and mornings; take no fatiguing exercise or excessive excursions; go to bed early, and get up late. In fact, live an extremely calm and regular life.”

Once arrived at about the 1st of November, experience has taught that, after a thermal treatment with a view to strengthening the chest, and especially the mucous membrane of the air passages, to drink the mineral waters at home for twenty days is the surest way to avoid colds, bronchitis, and other pulmonary affections.

There are many ways of drinking the Mont Dore water—pure or mixed with various substances. If the water is drunk pure, it ought to be heated in a water-bath, at 36° or 40° C. (= 96·8° or 104·0° Fahr.), in order to revive the chemical reactions. In this case, it is better to have the water in flasks containing a quarter of a litre (about 8 $\frac{3}{4}$  fl. oz.); and, according to circumstances, one or two of these ought to be drunk each morning, at intervals of half an hour—for twenty days. (See Bertrand, pp. 113, 114.)

When there is more or less of morbid over-activity, the waters should be mixed with a third or fourth of boiling milk, or of some pectoral infusion, with the



addition of a spoonful of syrup, of gum, of tolu, of tar, or of some other balsamic terebinthinate.

A third mode of drinking the water is as follows, especially for dyspeptics:—Drink two or three half-glasses in the morning, with an infusion of lime, chamomile, or orange flowers, boiling, and sugared. The rest may be drunk with wine at lunch and dinner. In this case it is best to have the water in bottles, or in half-litres (about  $17\frac{1}{2}$  fl. oz.), according as the patient is disposed to drink more or less.

Towards the middle of March, again, for twenty days conform to the same prescriptions, so as to avoid influenza, laryngitis, and the various throat complaints of that season.

Then wait till the opening of the new “thermal season” at Mont Dore, to return and follow a new treatment, if it should be required; for it is necessary to say that two *Cures* at the bathing place itself, in immediate succession, are often indispensable for obtaining a certain result; and sometimes even three are necessary, especially if the disease is dependent *upon a diathesis*. It rests with the patient and particularly with his usual medical attendant to decide this question.

The persons afflicted with the diseases of which we have spoken, and who cannot come to follow the treatment at Mont Dore, ought to drink the mineral waters at home, following the indications for their use already laid down; only, they will be obliged to make an extra season in July, and they ought to be aware that the effects of the remedy will be less salutary than those of a Cure at the place itself.

As it is very possible that gargles, irrigations, or pulvisations may be indispensable, in addition to drinking

the waters, they should be procured in bottles of a litre each ( $=35\frac{1}{4}$  fl. oz.), of which the first two or three glasses should be drunk, and the rest used with a spray producer; Boudant specially recommends that of MM. Pyreire and Joal, which, he thinks, answers the best.

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## CHAPTER IV.

Results and Conclusions from Observations of the Treatment of Different Diseases at Mont Dore.—Chronic Diseases of the Chest; Neuroses of Respiration; Asthma; Tabes Dorsalis; Affections of the Heart, Stomach, Intestines, Uterus.—Paralysis.—Rheumatism.—Gout.—Dartre.—Articular Lesions.—Luxations.—Lymphatic Swellings, etc.—Effects of Sulphurous and other Waters compared with those of Mont Dore.

RESULTS AND CONCLUSIONS FROM OBSERVATIONS OF  
THE TREATMENT OF DIFFERENT DISEASES AT MONT  
DORE.—BERTRAND.

BERTRAND quotes the following statement of Brieu de —  
“The sufferers from pulmonary consumption have at all times made the celebrity of the waters of Mont Dore. Before Bordeu had made known the waters of Eaux Bonnes and had re-established the reputation of those of Cauterets, the success of the Mont Dore waters in this complaint had long attracted a great concourse of patients from all the neighbouring provinces. I think, this is the foremost proof of their virtues—for people would not long resort to a remedy which never cured.”

Bertrand says—“There is a peculiar circumstance connected with the history of the Mont Dore waters, which ought not be left unmentioned. At the time when the Roman establishment, recently discovered,

existed, Sidoine Apollinaire, in speaking of these waters, employed the very remarkable expressions, '*phthisiscentibus, medicabiles.*' After eight centuries of oblivion, when all tradition of their properties is lost, these waters are frequented *de novo*: they have to re-make their reputation, and *again it is for diseases of the chest* that they are recommended. This accord as to their virtues, at two epochs separated by so many centuries, and without the second judgment having been able to be influenced by the first, which remained unknown, is, if I am not mistaken, a very proper reason for maintaining the confidence which they enjoy.

"But this confidence ought not to be unlimited; and it would be strangely to abuse it to regard these waters as a *specific* against chronic diseases of the lungs, whatever the causes, the nature, the complications, and the more or less advanced stage of these complaints. The waters are able in certain cases to prevent phthisis by removing a morbid state which could not have failed to lead to it. Again, they are able to retard, and sometimes indefinitely to postpone, the development of phthisis in persons pre-disposed to it. There are severe and old standing pulmonary affections which they cure. There are others which will not fail to be aggravated by the use of the waters; it is not always then,—as many patients persuade themselves,—because we despair of their being cured that we send them away from Mont Dore, but *because the remedy is not suited* to their particular state.

"Pleurisy, pneumonia, hæmoptysis, but especially catarrh and phthisis, are the chronic pulmonary affections which we most often have to treat at Mont Dore."

## PROPOSITIONS CONCERNING CHRONIC DISEASES OF THE CHEST.—BERTRAND.

1. The waters and baths of Mont Dore are suitable in chronic pulmonary catarrh of whatever duration, and in peripneumonia (inflammation of the substance of the lungs)—equally chronic—provided there is but little fever and little heat of skin.

2. They are employed successfully in chronic affections of the lungs happening after the retrocession of any morbid principle whatsoever, or supervening upon any exanthematous fever, or upon the suppression of the menses or of hæmorrhoids.

3. The same means are suitable in the hæmoptysis of persons of little irritability and in whom the capillary circulation of the skin is languid, unless the complaint is complicated with an aneurismal dilatation.

4. They are able to arrest the advance of tubercular phthisis, and to determine its cure if the tubercles are few in number, and, in certain cases, to *prevent* this sort of degeneration.

5. Their use ought to be interdicted in every pulmonary complaint in which there is dry cough, heat and aridity of skin, sharp, small, and frequent pulse, and nervous perturbation—in a word, if the signs of irritation prevail over those of debility and relaxation of fibre.

6. The waters ought not to be permitted, either for drinking or for baths, in phthisis, when either the perspirations, the sputa, or the stools have become colliquative.

7. If either of these evacuations takes on this cha-



racter during the Mont Dore treatment, it ought to be discontinued *at once*.

8. In every serious and old-standing lung disease, if, during the use of the waters, a sudden and very remarkable *amelioration* occurs without any critical phenomenon to explain it, it is necessary, in however small doses the waters are being taken, to stop or suspend their administration.

9. However good may be the effects produced by the baths or waters, it is very rarely proper to continue their use beyond twenty days. From their too prolonged use too strong a stimulation results, short of which it is important to stop.

#### PROPOSITIONS CONCERNING NEUROSES OF RESPIRATION.

—BERTRAND.—RICHELOT.—BOUDANT.

1. The waters of Mont Dore do not relieve nervous dyspnœa or convulsive asthma.

2. They produce good effects in humid asthma following chronic pulmonary catarrh or the retrocession of the rheumatic or dartrous principle. (See Note, pp. 54, 55.)

3. Their use, especially that of the baths, is very dangerous if the asthma is complicated with organic alterations of the heart or great vessels.

Referring to the above conclusions of Bertrand relating to nervous asthma, the "Dictionnaire Général des Eaux Minérales" says:—

"Some more recent observers have endeavoured to propagate a different opinion. M. Boudant, supporting himself upon the opinion of M. Bertrand's son, asserts that, since *inhalation* has entered into the methodical

practice at Mont Dore, nervous asthma can be modified with the greatest advantage.

“M. Richelot sustains the same position, and does not doubt that the Mont Dore waters act in two different ways, according to the case, either by producing critical perturbations and determining to the periphery, or by a special, direct, elective action.”

The opinions of Boudant above referred to are expressed in a brochure entitled :—“*Des Diverses Espèces d'Asthme et de leur Traitement aux Eaux de Mont Dore,*” 1876, and are repeated in his larger work in 1877.

The following are his conclusions :—

1. The Mont Dore waters are very useful in nervous asthma if it is submited to their influence from its origin, or if it is dependent upon an arthritic, herpetic, or hæmorrhoidal state.

2. They are very advantageous in bronchial or catarrhal asthma.

3. All emphysematous cases are extremely relieved by this treatment, and some are cured, especially if they are young and the disease recent.

4. The resorption of œdema is much more difficult to obtain, the pulmonary infiltration rarely disappears entirely; but the blood globules having been vivified by this treatment, the patients find themselves strengthened, and are able to hold out for a long time.

5. Cardiac asthma is very variable in its therapeutic results. Its treatment calls for great experience and continual prudence. With certain precautions, well understood, no accidents occur, and some patients go away much relieved. If any are cured, it is because the dyspnœa is found to be under the influence of a diathesis.

6. Finally—dyspeptic asthma is the most often cured : but after the treatment it is urgent to avoid the causes which are competent to renew the symptoms.

HEART, STOMACH, INTESTINES, UTERUS.—BERTRAND.

From his numerous observations, contained in Chapters III., IV., V., VI. of his work, Bertrand concludes that the waters of Mont Dore produce good effects in *chronic affections of the heart*, of the stomach, of the intestines, and of the uterus—when these organs are free from organic changes and from degeneration of tissue, when there is no febrile complication, when signs of general debility prevail over those of excitability, and especially when the cause of the complaint is the retrocession of the principle of rheumatism, gout, or dartre.

TABES DORSALIS.—BERTRAND.

After recounting three cases, Bertrand concludes his observations as follows :—"If the waters of Mont Dore are able to dissipate or alleviate the numerous infirmities occasioned by masturbation, they succeed still more certainly in cases of exhaustion occasioned by the abuse of sexual intercourse. All things being equal, the accidents which result from this last excess have not so much gravity as those which follow the former, and they attack the principle of life less radically. We find the reasons for this in the difference between the two acts. These reasons, founded on physiology, have been deduced with no less clearness than judgment by MM. Fournier and Bégin, in their article upon masturbation."

## PROPOSITIONS CONCERNING PARALYSIS.—BERTRAND.

1. Paralysis following rheumatism, or cutaneous phlegmasiæ, or the suppression of habitual discharges, can be cured by the use of the waters, baths, and douches of Mont Dore.

2. In paralysis caused by rheumatism, it is a good sign, if the pains which preceded it return during the use of the baths.

3. When this form of paralysis is *incomplete*, it is necessary to discontinue the treatment if it increases the weakness without recalling the pre-existent pains.

4. If there occur heat of skin and local redness, or an eruption of small pimples equally local, and if these phenomena are accompanied by no more than a slight amount of fever, it is not necessary to suspend the treatment.

5. We run the risk of aggravating the state of the patient if, in paralysis supervening upon a blow, or a shock to the posterior part of the trunk, we direct the douche upon the spine.

6. If the cause of the paralysis is seated in the brain or its dependencies, the baths of Mont Dore are rarely useful; and, unless administered with great circumspection, they are capable of doing much harm.

7. Whatever may be the cause of the paralysis, the use of the baths of Mont Dore, taken at their natural temperature, is dangerous if there is any brain embarrassment, or any vicious determination of the fluids or vital forces towards that organ.

## PROPOSITIONS CONCERNING CHRONIC MUSCULAR RHEUMATISM.—BERTRAND.

1. The baths of Mont Dore are nearly always salutary in uncomplicated chronic muscular rheumatism.

2. During their use, and often for a short time afterwards, the pains are increased or renewed. It is well to forewarn the patient of this phenomenon which is usually of good omen.

3. It is an unfortunate sign if the pains are not relieved during immersion. In this case either there is a venereal complication, or pains symptomatic of a morbid state of the viscera or of a deep lesion of some articulation have been mistaken for those of rheumatism.

4. It is necessary to stop the treatment if, during its continuance, weakness succeeds the pains, or if that which already existed increases while the pains are relieved.

5. The baths are not suitable if the rheumatism co-exists with a state of constitutional nervousness, or if such a state preceded it.

6. They will be injurious if the rheumatism has gradually produced a general emaciation, especially if there are signs of the imminence of hectic fever.

7. Partial loss of flesh does not contra-indicate their use, but it makes the cure longer and more difficult.

## PROPOSITIONS CONCERNING CHRONIC GOUTY RHEUMATISM (RHEUMATIC GOUT)—BERTRAND.

“Few patients find, at Mont Dore, more rapid relief than those affected with gouty rheumatism (rheumatic gout). If the complaint is uncomplicated, if it is not



symptomatic of some chronic disease, and if it is not of too long standing, the baths and douches restore with marvellous promptitude the movements of the limbs which have been prevented by the gouty swellings."

1. The waters, baths, and douches of Mont Dore produce very good effects in chronic articular swellings caused by rheumatic gout.

2. It is prudent to begin the treatment with the *temperate* baths.

3. It is necessary to withhold the douches if the disease is complicated with irritation or relative feebleness of any viscus,\* or if the patient has already suffered from rheumatic or gouty retrocessions; and to discontinue them if, during their use, any accidents occur which lead us to fear such retrocessions.

4. The baths and douches are rarely useful in articular swellings of very long standing.

5. Little success is obtained by these means in swellings of articulations "*à leviers courts*."

6. The baths and especially the douches rapidly aggravate, and without profit, articular swellings complicated with or resulting from syphilitic affections.

7. They are injurious if the articular affection depends upon a morbid condition of any viscus.

#### PROPOSITIONS CONCERNING LESIONS OF THE ARTICULATIONS OCCASIONED BY GOUT.—BERTRAND.

1. The baths and douches are suitable in cases of articular weakness occasioned by gout; also in the chronic swellings of the joints coming on in the course of this complaint.

\* See p. 2, "A beam is no stronger than its weakest part."

2. The use of the baths ought to precede by some days that of the douches, and these ought only to be permitted when there is neither pain nor redness, and when the patient is free from fever. In the opposite cases treatment ought to be commenced with the temperate baths.

3. If the douche is too strong or too prolonged, or if its use is continued unduly, it aggravates the state of the patient, and may even bring on a new attack of gout.

4. The use of the douche will be dangerous if the patient has already been subject to retrocessions of gout, or if any viscus is in a pathological condition.

5. The baths, at their natural temperature, are contraindicated if there is drowsiness, or if the affection is complicated with a vicious determination towards the brain.

#### PROPOSITIONS CONCERNING CONSECUTIVE DISLOCATIONS.—BERTRAND.

Spontaneous dislocations of the femur are not rare in the mountains of Auvergne, because scrofulous persons are so common there. Each observation under the head of treatment in these cases might be ended by the same formula, and that formula is not satisfactory.

1. The waters of Mont Dore are able to cure consecutive luxation of the femur, *from external causes, when the subject is healthy.*

2. Their use is powerless in consecutive luxations developed under the influence of scrofula.

3. They rarely arrest the progress of commencing luxations due to the above cause.

4. Whatever may be the cause of the consecutive luxation, the baths and douches strengthen the dislocated member, prevent its emaciation, and, generally, augment the extent of movements more or less interfered with by the new position of the parts.

In his concluding remarks, Bertrand says that, but for a fear of too greatly lengthening his work, he would have shown what good effects the Mont Dore Cure produces (*a*) in uncomplicated chronic uterine catarrh; (*b*) in indolent swellings of lymphatic glands, if not of too long standing, when developed under the influence of a constitution in which laxity of fibre predominates; also its excellent effect (*c*) in curing the tendency to returns of erysipelatous inflammation in parts which have been originally *symptomatically* affected with it, but in which the local tendency remains after the constitutional cause has gone; (*d*) in chronic inflammation of the skin; (*e*) in recent skin complaints of local origin; (*f*) in restoring eruptions to the skin which have produced serious internal disorders by retrocession; and (*g*) in restoring movement and strength to stiffened and weakened joints.

EFFECTS OF SULPHUROUS AND OTHER WATERS COMPARED WITH THOSE OF MONT DORE.—DR. DOBELL'S REPORTS ON DISEASES OF THE CHEST. 1876—1877.

M. Lassalas ("Etudes sur la Phthisie Pulmonaire au point de vue du traitement") recommends the Mont Dore water at the beginning of tubercular disease. This water, by preventing pulmonary congestion, may arrest the imminent development of tubercle; whilst, by sti-

mulating the peripheric capillaries, it tonifies the skin, and renders it less sensible to atmospheric vissicitudes. One season spent at Mont Dore may often suffice to cure a predisposition to bronchitis. Not only does the Mont Dore water not produce hæmoptysis, but it prevents it; while the patients who present any tendency to blood-spitting should not take the *Eaux Bonnes* or other sulphurous waters. Although it quiets the circulation, the Mont Dore water is far from being depressing; on the contrary, it stimulates and improves the digestive and nutritive functions; but it is contra-indicated in affections either of the heart, or of the large vessels, and whenever there is any tendency to cerebral hæmorrhage or softening. Again, patients who are debilitated, or continuously feverish, should not go to Mont Dore.

M. Sénac-Lagrange ("Jour. de Med. et de Chir. Prat.," Tome xlv. 1875), says that the Cauterets water is particularly prescribed for phthisical patients, and for those who are affected with chronic affections of the respiratory organs. But there are several contra-indications to it, and M. Sénac-Lagrange agrees with M. Pidoux on this point, that the use of this mineral water is not contra-indicated by the erethism, nervous irritability or neuropathic conditions of the patients but by their "tubercular vulnerability," *i.e.* the readiness with which their tissues produce tubercle. Unless the body can afford a certain amount of sound constituents and unless the treatment is well borne, the use of sulphurous water is irrational; and *sulphurous medication is sure to fail when all general stimulant or tonic remedies are either badly borne or powerless.* It is also a mistake to prescribe it in the presence of either remittent or intermittent fever, or of cough which is

easily followed by vomiting. Again, the persistency of diarrhœa is a formal contra-indication. The rule is not quite so absolute with regard to the fever when this is distinct from tubercular hectic. The good state of the digestive function is most favourable, and arthritic or herpetic antecedents are undoubtedly the best indications for the Cauterets water.

The "Medical and Chirurgical Review" for January, 1876, in an article on "Baths, Waters, and Climatic Cures," says that:—Great attention has been paid to the local treatment of pharyngeal and laryngeal affections. The springs of brine, as at Reichenhall, in Bavaria, and at Bex, in Switzerland; of salt water, as at Soden; of alkaline, as at Ems; and of sulphur water, in many other places, are now systematically applied. Of late years the inhalation of gases and of pulverised waters has become a common practice in the treatment of pulmonary complaints. Patients spend some hours in rooms having their atmospheres impregnated with the waters required, thus inhaling a certain amount of their spray or vapour. At Lippsprunge and Inselbad, and at Panticosa, patients are supposed to be better for inhaling the excess of nitrogen with which their waters are charged. At Reichenhall salt waters are pulverised; at Weilbach and other places sulphuretted vapour is inhaled. This last procedure has been very widely followed of late in France. It is thus described by Dr. Rehdén:—"Gargling the throat with sulphur water, applying the spray to the back of the throat, and inhaling the vapour of sulphuretted hydrogen, have all found especial favour in France, and may be seen practised at Marliotz, Allevard, Enghien, Amelie-les-Bains, Eaux Bonnes, and most of the Pyrenean springs. The effects of these inhalations are



thus described by the French :—First, there is a sedative action, along with a general feeling of comfort; then comes a period of discomfort—circulation and respiration both being irregular and accelerated; next comes the stage of tolerance, in which the pulse is slower than its normal state; and lastly, if the sitting is continued too long, there is a species of intoxication, with headache, and even with vertigo. The process suits lymphatic and nervous better than sanguine temperaments; delicate people bear it quite as well as the strong; women and children are more readily affected than men. The therapeutic effects attributed to inhalation are—the relieving of congestion of the bronchial mucous surfaces, especially of capillary bronchitis; promoting the absorption of plastic deposits; above all, the relieving dyspnœa, and bringing into work portions of the lungs that have been inactive. Inhalation sometimes induces neuralgia of the fifth pair.”

At the Congress of Clermont, M. Lassalas, in recommending the inhalation of the Mont Dore water for hæmoptysis, said that under the influence of this treatment, the pulse, without losing its strength, becomes less frequent; the respiratory movements increase in extent; and the blood-spitting is directly arrested. This result should not be attributed to the effect of altitude, for, in fact, it is not at all uncommon at Mont Dore to see hæmoptysis occurring in patients who never before had been the subjects of this accident. However a course of inhalations suffices to stop it. M. Lassalas was by no means prepared to say that every case of hæmoptysis must necessarily yield to this treatment. Nevertheless, although his predecessor at Mont Dore held blood-spitting to be a decided contra-indica-

tion to the use of the mineral water, M. Lassalas, out of 120 cases of hæmoptysis thus treated, had not met with one failure.

M. Richelot ("Union Médic.," No. 61, 1877) says that the Mont Dore treatment is a sedative to the nervous system and to the circulation. It also obviates pulmonary congestion. As a sedative to the circulation, it may prove debilitating in some subjects. Although the Mont Dore hot baths may sometimes produce stimulation, this effect, in most cases, is very much modified by that profuse sudation which results from exposure to a high temperature. Cruveilhier said he could not lay sufficient stress upon the fact that tubercle, of itself, does not fully account for the amount of danger which arises from pulmonary phthisis. If we could succeed in keeping tubercular lungs free from secondary pneumonia, many cures would be realised. This object can be obtained through the Mont Dore treatment. By obviating the tendency to pulmonary congestion and to subsequent hæmoptysis, this treatment causes feverishness to subside. In addition to producing these effects, it promotes the more or less complete resolution of pre-existing pneumonic patches and inflammatory thickening. By encroaching upon the respiratory area, these lesions diminish the vitality of the pulmonary tissue, and thus further the development of the morbid products.

In the early stages of phthisis, Mont Dore generally proves a success. But in cachectic cases it utterly fails. The inflammatory form of consumption, marked pyrexia, nervous erethism, and hæmoptysis should be considered as so many indications of the Mont Dore medication. In treating strumous or anæmic subjects, and in cases

of acute tubercle or of galloping phthisis, this medication should be precluded.

The Mont Dore water can be prescribed in different ways. In many cases in which neither inhalations nor baths are well supported, its internal use is the sheet anchor. Some patients cannot digest the water from the Madeleine (Bertrand) Spring. Of all the Mont Dore sources, Ramond Spring is the most chalybeate; this also is generally found to be the most digestible. (See Table II., pp. 46-51.) Next to the internal use, inhaling the vapour is the most frequent mode of treatment. Pediluvia, taken in the streams of the various springs, and consequently at the native temperatures, are also very often prescribed. They are sometimes very beneficial. At other times, however, they promote profuse perspiration and, perhaps, subsequent chilliness. Hence, the necessity of closely watching their effects. The general bath must be moderately warm. It is an efficient sedative and anodyne. It abates the frequency of the pulse, soothes the nervous erethism, and procures sleep. Its use, of course, requires great precautions and care. The hip-bath may be either warm or hot. The warm hip-bath is found most convenient in those cases in which general baths are not well supported. The hot hip-bath, *i.e.*, at a temperature of from 107° to 111° Fahr. is very seldom indicated in pulmonary phthisis. In some cases, inveterate hæmoptysis may be checked by this therapeutic means. Nevertheless, considering the risk with which its use is attended, the *hot* bath, as a rule, should be discarded from the treatment of consumption. Lastly, provided the state of the patient admits of its use, the descending douche may be expediently combined with tepid baths. It should be applied to the scapulo-dorsal

region. If its intensity is moderate, it will assist in promoting the resolution of pulmonary congestion. If, however, it is too energetic, it will increase this congestion and determine hæmoptysis. Its application, therefore, requires close watching. June is the best month of the Mont Dore season. July and the earlier part of August are too hot, and later on the climate soon becomes too cold.

SULPHUROUS WATERS AND MONT DORE WATERS COMPARED.—“DICT. GÉN. DES EAUX MINÉRALES,” 1860.

The authors, MM. Durand, Fardel, Le Bret, Lefort, and François, say that the work of Bertrand and daily observations do not allow the reservation of any doubts as to the legitimacy of the Mont Dore treatment in bronchial catarrh. But they define and limit its field.

“A primary observation requires consideration. The thermal treatment of pulmonary catarrh is essentially represented by *the sulphurous waters*. Can we establish any resemblance between their mode of action and that of Mont Dore? None at all! the most absolute contrast appears between these two medications.”

In the administration of sulphurous waters, we seek the application of a *medicinal* agent which we set ourselves to disengage from every accessory agent, and to reduce to its simplest expression. We have recourse especially to the *internal administration of the mineral water*, and the cold or tepid waters are considered most efficacious. The bath is only an accessory, the douche exceptional, the vapour bath discarded, and in inhalation we attempt to isolate as much as possible the required element, the sulphurous principle.



At Mont Dore, on the contrary, the *bath* is the basis of treatment, the bath very short and very hot—that is to say, of which the *medicinal* action is infinitely reduced. Mineral water is prescribed, but on condition that its temperature is elevated; the *douche* is very much used; finally, if inhalation is practised, it is in a veritable vapour bath, and the vapour of water, far from being prohibited, constitutes the essential, and certainly the most constant element of the treatment.

We see, then, two medicaments which have nothing in common except that they both belong to Thermal Treatment. In the one the disease is treated by a direct agent, in the other it is attacked indirectly. These are two opposite processes which we employ to obtain identical results—a very common thing in therapeutics. The authors say that it is not indifferently or by chance that we should have recourse to medicaments so different. The sulphurous waters are specially indicated in catarrhs which appear to belong to lymphatism and herpetism, or, if we prefer the expression, they are specially suitable to lymphatic and dartrous individuals, affected with catarrh. This is one of the considerations best defined in thermal medicine. With regard to the indications for treatment at Mont Dore in this respect we find valuable information in the work of Bertrand.

When the chronic affection of the chest, of whatever nature, is symptomatic of some rheumatic, gouty or dartrous\* affection of which the manifestations have disappeared, and when it is desired to recall these to their seat of election, then this perturbative and revulsive treatment (of Mont Dore) finds its useful appli-

\* See Note, pp. 54, 55.



cation. Such then should be the parts respectively assigned to Sulphurous waters and to those of Mont Dore.

With regard to Rheumatism, Gout, and Dartre, the authors consider that the system adopted at Mont Dore has much value not only against active and regular rheumatism, in common with many other mineral waters, but *specially* against lurking and misplaced rheumatism—in a word, against all the *irregular manifestations* of rheumatism; and that with regard to Dartre and Gout the same may be said of the *irregular manifestations* of these morbid principles—whether or not the waters have any speciality of action against the diseases themselves in their active forms. In cases of the kind above mentioned “the medication at Mont Dore appears to offer resources which may be sought for in vain elsewhere.”

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## CHAPTER V.

Review of the Mont Dore Cure.—Answer to the question, How can such simple means obtain such remarkable results?—Classification of the Diseases treated at Mont Dore, and of the Means by which they are Cured.—Comparison of these with the Results of Ordinary Medical Practice.—References to the Author's Views expressed in various Works, at various dates, independently of the Mont Dore question.—Special Note regarding the Relation between the Cutaneous Functions and those of the Liver, and the Influence of the Liver in various Morbid Constitutional States.—Interdependence of Diseases.—Germs and Vestiges of Disease.—Prevention of the Invasion and Fatality of Diseases.—Abnormal Physiological States.—Cases of Winter Cough, Catarrh, Bronchitis, Emphysema, Asthma, clinically arranged.—What we have to treat in Winter Cough.—Importance of Eradicating Bronchial Complaints.—Hereditary Tendency.—Diathesis.—Interdependence of Skin and Chest Complaints.—Mineral Waters, Baths, etc.—Causes of Colds, Coughs, and Short Breathing.—Counter Irritants.—Hot Fomentations.—Poulticing by Steam.—Inhalations of Vapour, Atomised Fluids, Fumes.—Post-nasal Catarrh.—Hygiene.—Shutting-up and Non-Shutting-up Systems.—Means of Treatment for Naso-Pulmonary Tract.—Summer and Winter Treatment.—Important Facts regarding Different Kinds of Consumption.—Arsenic.—Antiseptics.—Remarks as to detailing Treatment for Individual Cases.—Reminder that the Mont Dore Treatment is a definite and potent Course of emphatically Medical Treatment, requiring much Skill and Judgment in its Administration.—It does not preclude the addition of other Treatment if required.—Form of Prescription Paper recommended for the Mont Dore Cure.

AFTER reading through the long lists of complaints (see pp. 54-59) for which the Mont Dore Cure is said to be suitable, on the authority of the most eminent

physicians practising in the Auvergne from 1768 to the present day, our first inclination certainly is to smile incredulously, and to consign the statements to the usual category of puffs of mineral waters and health resorts. We may well be tempted to ask, How can such simple means obtain such remarkable results? How can the same remedy cure so many diseases? This would certainly have been my own feeling, *had I not seen the results of the treatment first, and read the statements afterwards.*

But having been satisfied with the results, by personal observation, I sought for their explanation by an unprejudiced study of the whole subject, and, particularly, (*a*) by comparing the Mont Dore “cures” and the processes by which they were obtained, with the “cures” obtained by myself and others, conducted under ordinary circumstances by the ordinary means; and (*b*) by carefully noting whether the means upon which I and others had been accustomed to place the greatest reliance were not similar to those most vaunted at Mont Dore; and (*c*) whether the diseases cured at Mont Dore—heterogeneous as they at first sight appear when individually enumerated—could not be brought under some *classification* as to their essential natures which would reduce them to a few heads; and (*d*) whether we might not find that, in this classification and under these heads, all were brought under the rational influence of a few well-known potent remedies; and finally, (*e*) whether these few well-known potent remedies were not included in the list of armaments of The Mont Dore Cure.

There can be no doubt that a careful unprejudiced investigation of the subject in this manner does bring us to exactly the conclusions suggested. The long list of diseases stated to be suitable for the Mont Dore Cure

can readily be assembled under a few general headings, according to their constitutional or local causes and inherent natures. And these classes of disease are such as we know to be amenable to treatment by the very means adopted at Mont Dore. And when we ask ourselves why the Mont Dore Cure should obtain better results than we have been able to obtain under ordinary conditions by similar means; the answer is simple enough to any physician of large experience in such matters: viz., that—under the ordinary circumstances of medical treatment—we scarcely ever have it in our power (*a*) to put a sufficient number of our most potent means of treatment into force at once, (*b*) to combine them in a systematic manner, and (*c*) to secure that they are effectively carried out during a sufficient period of time; and (*d*) that this is especially the case with such remedies as we have been discussing; whereas all the required conditions are secured at Mont Dore; and hence the grand difference in the results.

Looking through my own published observations on the various diseases which form so large a proportion of the Mont Dore “cures,” I find many passages bearing upon the statements which I have just made, scattered through the following works:—

1. “Lectures on the Germs and Vestiges of Disease,” etc. Delivered at the Royal Hospital for Diseases of the Chest, 1861.

2. “On Diet and Regimen in Sickness and Health, and on the Interdependence and Prevention of Diseases and the Diminution of their Fatality.” First edition, 1864; sixth edition, 1875.

3. “On Winter Cough, Catarrh, Bronchitis, Emphysema, Asthma.” First edition, 1866; third edition, 1875.

4. "On Affections of the Heart and in its Neighbourhood; Cases, Aphorisms, and Commentaries." First edition, 1872; second edition, 1876.

5. "Reports on Diseases of the Chest." Vol. I., 1875; Vol. II., 1876; Vol. III., 1877.

6. "On Loss of Weight, Blood-spitting, and Lung Disease; and on the Functions and Disorders of the Liver and their Management in accordance with the Results of Modern Discovery." First edition, 1879; second, 1880.

These works were written at various times, extending over a number of years, without any special reference to Mont Dore or its methods of treatment. Therefore, they indicate—quite independently—the course of thought and experience by which I have been led to advocate the use, and the introduction into this country, of that combination of so many of the means of treatment which I have learnt to be most potent, constituting the important system known as "The Mont Dore Cure."

Notwithstanding all that has been said in the elaborate treatises, which I have quoted in this work, by Bertrand and others, concerning the action of the Mont Dore treatment upon the cutaneous and other functions, they seem to have almost entirely neglected one point,—which must surprise us, in the present state of our knowledge and with the views which now prevail, at least in this country, with reference to the effects of baths:—I mean the relationship between the cutaneous and the hepatic functions, and the importance of these to the nutritive and respiratory functions. When we consider how many of the affections treated successfully at Mont Dore are connected with gout, rheumatism and dartre, and how powerful an influence the liver exercises upon



these morbid constitutional states; when we consider, too, how great is the influence of the portal circulation and the formation of *Bernardin* (or Glycogen, see note p. 144) in many of the chest affections treated successfully at Mont Dore; I do not think we can doubt that the effect of the bath and other treatment upon the liver ought in many of these cases to be considered as an important factor.

I will commence my quotations, therefore, with the following passages on this subject from my chapter "On the Functions and Disorders of the Liver, and their Management, in Accordance with the Results of Modern Discovery," published last year:—"I have already spoken of the importance of attending to the action of the liver, and I have referred to some laborious investigations which I made so long ago as 1853 with reference to fatty liver in consumption. But in all these places the liver is only referred to in its subsidiary connection with the general argument regarding the action of the pancreas. In this chapter I shall reverse the order and give precedence to the liver. The importance of the liver in connection with our present subject may be considered under six principal headings:—

"1. Its connection with the digestion and assimilation of the fat elements of food (hydro carbons).

\* Among modern labourers in this field, the following may be specially mentioned: Kiernan, Budd, Rokitsanski, Frerichs (whose work has been popularised in English by the valuable translations and *rechauffées* of Murchison), Bernard (whose discoveries have been subjected to important correction by Pavy), Wickham Legg, Parkes, Habershon, Harley, Rolleston, Rutherford, Warburton Begbie, Gilbert, Morehead, Waring, Wilks, Gamgee, Brunton, Grünwald, Krueger, Schiff, Röhrig, Nasse, Bocker, Radziejewski, Kuhne, Recklinghausen, Klein, Stiedeler, Neukomn, Eulenberg, Brown-Séguard, Rouis, McDonnell.

"2. Its connection with the digestion and assimilation of the saccharine and amylaceous elements of food (carbohydrates).

"3. Its connection with the digestion and assimilation of the nitrogenous elements of food (albuminoids).

"4. Its connection with the disintegration of nitrogenous matter.

"5. Its liability to congestion when the pulmonary circulation is obstructed in front, with consequent disturbance of its functions; this retrograde congestion and disturbance of functions extending in due course to all the organs which contribute to the portal circulation.

"6. The apparently anomalous and puzzling fact that fatty enlargement of the liver is especially apt to occur when all the rest of the organism is wasted by consumption.

"This remarkable combination of circumstances seems to invest the liver with so much interest in relation to loss of weight, blood-spitting, and lung-disease, that we are astonished to find how little is said about it in any of the existing works on consumption.

"If we take a bird's-eye view of the organism—with its general plan of a venous system separated inviolably from an arterial system by the lungs, and a great food-supplying apparatus for the generation of blood and tissues, and for the evolution of heat and other modes of motion—the liver strikingly attracts our notice, as a huge machine placed as peremptorily between the food supply and the pulmonary circulation as are the lungs between the veins and the arteries, intercepting every particle of new food that can be absorbed by veins. So jealously is this shut off from the lungs, that the blood of the hepatic artery, after ministering to the nutrition

of the liver itself, and even that of the vasa vasorum of the hepatic veins, is returned to the portal vein before it is allowed to reach the lungs.

“We cannot for a moment doubt, when we regard this imperative arrangement for interception, that it has some most vital purpose.

“The next thing that most forcibly strikes us in this bird’s-eye view is a similarly peremptory arrangement, by which everything absorbable by lacteals and lymphatics is scrupulously kept out of the way of the liver, and, after passing through a system of glands, is conveyed by the thoracic duct directly to the lungs.

“And again we are struck by the definite arrangement by which all the venous blood of the body other than that charged with new food, is, like the contents of the thoracic duct, kept out of reach of the liver, and conveyed directly to the lungs.

“We find that, by these mechanical arrangements, all worn out tissues, all fats not absorbed by the portal system of veins, all the products of interstitial nutrition, are submitted directly to the pulmonary circulation, but that all the other elements of nutrition *must be submitted to the operations of the liver* before they are fit for use in the organism.

“What, then, are the effects of these important operations?

“1. First and foremost in every way is the conversion of the carbohydrates of the food, and probably some of the albuminoids, into a material called Bernardin,\* amyloid matter, or glycogen. It matters not by which of these names it is called, but I prefer the first, so that it is

\* After Prof. Bernard, the discoverer of this material (at the suggestion of Dr. Pavy).

clearly understood—that from the time the food is converted into this body it becomes utilizable as a source of force and nutrition, and that—so long as the functions of the liver are normal, and the quantity of carbohydrate food introduced is not in excess of the maximum capacity of these functions—only a trace of sugar *per se* escapes conversion into Bernardin, and is allowed to reach the pulmonary blood, any excess of this being rapidly excreted by the kidneys, constituting diabetes.

“ 2. The second effect is the interception of so much of the fats as are absorbed by the portal system of veins (almost entirely oleine) for the manufacture of bile, only the surplus over and above what is employed for this purpose being allowed to reach the lungs by the hepatic veins. All the solid fats, and the bulk of all fats, are saved from the liver—being emulsionised by the pancreatic secretion, and conveyed to the lungs by the lacteal route.

“ 3. The albuminoid materials of food absorbable by the portal system of veins are disintegrated in the liver, leading to the formation of urea and other nitrogenous products, afterwards excreted by the kidneys. In the performance of this and other chemical processes, the liver becomes a great centre of animal heat, the temperature of the liver reaching  $104^{\circ}$  to  $106^{\circ}$  Fahr., when all the rest of the body is at  $98^{\circ}$  and  $99^{\circ}$ . It is important to remember that the blood of the portal vein when it enters the liver contains the blood from the spleen, and that probably in connection with this is the fact that the worn-out red blood discs are cast into the liver—forming part of that copious supply of nitrogenous matter poured into the liver, the disintegration of which has already been referred to as a source of animal heat,



and in the course of which blood pigment is probably converted into bile pigment, and bile pigment into urinary pigment. It is not certain, however, that bile pigment and the biliary acids are not secreted from the blood of the hepatic artery. But, as I have already mentioned, the venous return of the hepatic artery is into the portal circulation.

“ 4. We come next to the special secretion of the liver, that rich, complex, abundant, and important fluid, THE BILE, poured out at the rate of about two pints every twenty-four hours, not less than thirty-nine-fortieths of which is returned to the blood during its passage through the biliary and intestinal tract—in the course of that great and important osmotic circulation constantly going on between the fluid contents of the bowel and the blood. The amount of fluid poured into the intestines and reabsorbed in twenty-four hours, says Professor Parkes, ‘is almost incredible, and constitutes of itself a secondary or intermediate circulation never dreamt of by Harvey. The amount of gastric juice alone passing into the stomach and then reabsorbed amounted, in a case lately examined, . . . to nearly twenty-three imperial pints (if we put it at twelve we shall certainly be within the mark). The pancreas . . . . furnishes twelve pints and a-half in twenty-four hours, while the salivary glands pour out at least three pints; . . . . the amount of the bile is probably over two pints. . . . The amount given out by the intestinal mucous membrane cannot be guessed at, but must be enormous. Altogether, the quantity of fluid effused into the alimentary canal in twenty-four hours amounts to much more than the whole amount of blood in the body. . . . The effect of this continual outflowing is



supposed to be to aid metamorphosis; the same substance more or less changed, seems to be thrown out and reabsorbed until it is either adapted for the repair of tissue or has become effete.'

"As regards that small proportion of the bile (not more than one-fortieth of the whole) which is excreted through the intestines, it acts as a potent antiseptic upon the contents of the bowel, stimulates peristaltic action, and in this way, as well as by giving a proper consistence to the fæces, assists in their regular discharge, and it rids the system of those waste products of blood and tissue which can no longer yield up nutriment or force to the organism. It is a striking fact that all the digestive fluids, from the saliva downwards, promote decomposition until we come to the bile, which, for the first time, reverses the action, and interposes an antiseptic, thus maintaining the *status quo* of the proceeds of digestion until they are absorbed or cast off as waste, and staying the evolution of gases in the passage of this waste out of the body.

#### SELECTIONS FROM "DIET AND REGIMEN" AND "AFFECTIONS OF THE HEART, &C."

##### THE INTERDEPENDENCE OF DISEASES.

"There are few questions which so test the depth and extent of a doctor's acquirements as the interdependence of diseases, by which I mean the way in which one disease leads to another, substitutes another, aggravates or relieves another; the way in which disease appearing at one part of the body depends upon the derangement of another part, perhaps distantly separated; the way in which disease of one kind in an ancestor leads to disease

of several different kinds in the descendants; the way in which one general morbid cause may produce different effects upon different persons, according to the conditions of health in which they happen to be at the time; and numberless other similar phenomena.

“These are matters of the highest importance in the right management and treatment of disease. Yet they are so little understood that the pains taken by a conscientious doctor in their investigation are not appreciated by the majority of persons. . . .

“Diseases of the heart and arteries are intimately connected with those of the lungs and throat; diseases of the lungs with those of the heart, arteries, and wind-pipe; diseases of the brain with those of the lungs, heart, and arteries; and all of these are often inseparably connected, in the relation of cause and effect, with affections of the stomach, liver, pancreas, kidneys, intestinal glands, &c., &c. Therefore, for a doctor to limit his practice to diseases of the heart, to diseases of the throat, to diseases of the lungs, or to diseases of the windpipe, is to constitute *a speciality so narrow* that he is in danger of losing sight of the great principles of medicine.”

“Cases 49 to 55, and also Case 28, [related in the work on “Affections of the Heart”] among many other points of interest, illustrate:—

“1. The intimate and important interdependence of diseases of the heart and diseases of the brain.

“2. The satisfactory effects of medical treatment, even in severe and incurable diseases of the heart and lungs.

“3. The importance of lung complications as causes of death in heart disease.

“4. The importance and dangers of affections of the

digestive organs in heart disease (see also cases of 'Pain at the Heart').

"5. The way in which affections of the lungs and affections of the stomach become the first demonstrators of the fact that the condition of the heart is abnormal."

# SELECTIONS FROM "LECTURES ON THE GERMS AND VESTIGES OF DISEASE, &C."

## VESTIGES OF DISEASE.

"I demonstrated that, when we analyse the natural history of any disease, we find that the *principal factors of its essential cause, of its predisposing causes and of the causes of its fatality* fall under one of the three headings:—1. Conditions of life. 2. Coetaneous diseases. 3. Vestiges of Disease.

"I showed, not only theoretically but from actual observations made by others as well as by myself, how the organism becomes damaged by these VESTIGES OF DISEASE—how the vital force becomes defective through these Vestiges, how this defective state of the vital force becomes the essential cause and the predisposing cause of disease; and how the Vestiges of one disease become the causes of fatality in whole families of other diseases.

"I pointed out that in the large majority of deaths from disease, *the fatality is due, not to the disease itself, but to the vestiges of some pre-existent disease, operating in one or other of the above ways.*

"In illustration of this great fact, I have set forth the course of events, by which the vestiges of disease, passing under the names of ANÆMIA and FATTY DEGENERATION, become the actual causes of a large number of the deaths registered under the following names:—

"Tabes mesenterica, eroup, measles, hydrocephalus,

whooping-cough, dentition, convulsions, apoplexy, paralysis, delirium tremens, intemperance, angina pectoris, diseases of the heart, pneumonia, diarrhœa, mortification, influenza, peritonitis, childbirth, bronchitis, jaundice, liver disease, kidney disease, and some others."

#### ABNORMAL PHYSIOLOGICAL STATES.

"We pass on to another and most important branch of our subject.

"I must now speak more at length of those *states of health* to which I referred in my second Lecture, when I said that I should impress upon you that 'they are intimately related to the definitely marked diseases'—those states so puzzling to the young practitioner, because they do not fall under any of the nosological headings which have been his landmarks in the study of disease—those states which, although perhaps familiar in their aspect to most old practitioners, are, nevertheless, most inefficiently treated, or not treated at all, because their interpretation is so little understood, and because their importance is not appreciated; *conditions which are not recognised as disease, but which certainly are not health*, and which I propose to class under the general heading of 'ABNORMAL PHYSIOLOGICAL STATES.' I will give you some examples of what I mean.

"A family of four children were exposed to the infection of measles at the same time, and from the same source; all of them *were supposed to be in health at the time*. One had the measles simply and slightly; one had a severe attack of pneumonia combined with it; one indicated a disposition to typhoid symptoms, and was completely oppressed by the morbid poison; a fourth lingered in



convalescence, and was found to have become the subject of a deposit of tubercles in the lungs.

“A party of friends, all *apparently* in what is called health, met at a funeral; they went together into a damp unwarmed cemetery chapel on a raw winter's day, and returned together, one and all complaining that they had taken ‘a severe chill.’ They dined together and went to their homes. One suffered an attack of rheumatic fever; one had anasarca; one jaundice; another bronchitis; a fifth pneumonia; a sixth diarrhoea; a seventh had erysipelas; and another had pleurisy. One coughed up a quantity of blood; while the rest got a restless night, and a cold in the head, and thought no more about it.

“These are no imaginary stories; analogous cases frequently occur within the experience of medical men in large practice. But what is their interpretation? Why did the same cause—the chill—produce such different effects, under external conditions apparently the same? No doubt, the first answer which suggests itself is, that the circumstances, so apparently the same, must have been really different. Well, Gentlemen, I will admit that, as the first step towards solving the difficulty. But I will insist that in a given case, the cause, so far as the chill is concerned, shall be the same in each individual; and the circumstances, so far as they are external, shall be the same for each individual. Nevertheless, these different effects shall be produced; and the reason we shall find to be this, that there are other causes and other circumstances, different in each case, existing *within the organisms* of the sufferers, with which *the one cause*—the chill—has to combine in producing its effect, and that the effect is the result of this combination of causes, different in each individual.



"Health is *the normal physiological state*; and peculiarities in, or divergences from this condition must be regarded as greater or less deviations from *health*, (abnormal physiological states) in proportion as they predispose to contingencies which increase the probabilities of death before the normal term.

"There are very few persons who pass through life in the normal physiological state. At some period of life almost every individual diverges, more or less, from this state in one direction or another; and during that divergence, although escaping an attack of what is recognised as disease, he certainly *is not in health*; and in almost every individual there is a tendency to diverge in some particular direction, during which divergence—*i.e.*, during that period of *deranged health*—he is particularly prone to certain classes of disease. In the case I have taken as an example of the effects of chill for instance—the man who had rheumatic fever was already surcharged with acid. He who had jaundice was suffering from defective excretion by the liver, requiring only a certain increase in the defect, or of the demands upon the excreting function, to throw the secretion back into the blood. The patient who had anasarca was suffering either from hydræmia, or from defect in the excreting powers of the kidneys. The sufferer from bronchitis I attended myself: he had chronic congestion of the bronchi, from repeated former attacks of bronchitis, and the circulation through his chest was defective, from a feeble, degenerated heart; but he had been accustomed to pass as a man in health, competent to perform the onerous duties of a tax-collector and county-court agent. He who had an attack of diarrhœa, found in his bile ducts or in the intestinal mucous membrane a safety

valve, by which he was saved from either anasarca, jaundice, or rheumatic fever. The subjects of erysipelas and pneumonia, and the man who had hæmoptysis, were already suffering from depraved states of the blood, or of the organs to which it was determined; and from which, in the last two cases, it escaped in different quantities; while the patient who was attacked with pleurisy was surcharged with urea from defective action of his kidneys.

“These several persons, therefore, were suffering, when they considered themselves in health—before the occurrence of the chill—from *abnormal physiological states* to which we can attribute the particular form of the disease which was set up, by the addition, in each case, of one and the same cause, viz., the chill. *But some escaped unhurt!* Because in them the physiological state was sufficiently normal that a resisting and re-actionary power existed, which was competent speedily to restore the functions of the organs subjected to the shock of the chill, and to make them compensate for the temporary arrest, by increased activity.

“I have chosen this group of somewhat crude examples on purpose that their meaning may be the more perspicuous. They, most of them, exemplify states of health dependent on the fluids and excretory organs of the body. It would be easy to bring many examples of degraded health consequent on disease attributable to the *nervous* system.

\*                      \*                      \*                      \*                      \*

“I assume, then, that (in the course of these lectures) I have sufficiently demonstrated that the ‘*vestiges of disease*’ stand first among the causes of death.

“I have shown that so long as these vestiges exist they

are causes of defect in the vital force, and thus act as factors of the essential and of the predisposing causes of fresh attacks of disease.

"I have shown that the diseases, from which these vestiges result, are but the manifestations of pre-existent physiological states, to which, by some means, the last condition has been supplied, necessary to complete the conditions of existence proper to the disease, which then is developed in its characteristic features.

"I have shown that these ABNORMAL PHYSIOLOGICAL STATES are indicated by the various conditions of impaired general health, 'conditions not recognised as disease, but which certainly are not health.'

"The sum of it is this:—

"1. The majority of diseases which we see excited by the various accidents of life are but the *manifestations* of pre-existent abnormal physiological states, which required only this last condition (the accident of life) to complete their development into the characteristic features of disease.

"2. Those conditions 'not recognised as disease, but which certainly are not health,' are the faint expressions of these morbid physiological states, while still deficient in the condition necessary to complete their development into the recognised features of disease.

"3. The multifarious and anomalous functional derangements which puzzle the physician, and make martyrs of the patients, depend, for the most part, upon the influence exerted by these morbid physiological states over the ordinary incidents of animal existence, which are thereby modified, coloured, and distorted.

"4. During the whole of the time that the physio-

logical conditions are disturbed, there is a greater or less *defect in the vital force*, and this defect, therefore, exists at a period anterior to what are usually understood as structural changes.

“I have shown that these abnormal physiological states, recognisable under various forms of impaired health, and attended by a legion of anomalous symptoms, may be traced back to still earlier periods in their history, when they require the greatest vigilance of the physician to detect any deviation from the standard of normal health.”

SELECTIONS FROM “LECTURES ON WINTER COUGH, CATARRH, BRONCHITIS, EMPHYSEMA, ASTHMA,” &c.

CLINICAL GROUPS.

“In collecting the notes of a large number of cases of Winter Cough, I have found that they may be very simply arranged in five clinical groups:—

“1. Cases in which there are physical signs of emphysema, and not of bronchitis, and in which there is no history of previous bronchitis.

“2. Cases in which there are physical signs of emphysema, and not of bronchitis, but in which there is a history of previous bronchitis.

“3. Cases in which there are physical signs of bronchitis, and not of emphysema.

“4. Cases in which there are physical signs both of emphysema and bronchitis.

“5. Exceptional cases, in which there are no physical signs either of bronchitis or of emphysema.

“Excluding consumption, and without attempting to

exhaust the subject, the following headings will be found to include the principal Exceptional Cases of winter cough (Group 5) arranged in the order of their importance.

" *a.* Post-nasal catarrh.

" *b.* Chronic recurrent laryngeal and tracheal catarrh.

" *c.* Ear-cough.

" *d.* Follicular disease of the pharynx.

" *e.* Superficial inflammation and serration of the edges of the soft palate.

" *f.* Elongated uvula, becoming relaxed and œdematous with every fresh attack of cold.

" These may each exist separately ; but they are often found associated in a single case.

#### WHAT WE HAVE TO TREAT IN WINTER COUGH.

" . . . . If we direct our attacks upon the cough, as though that were the disease, we shall make a fatal mistake, and shall most certainly be disappointed in our hopes of doing any permanent good.

" What we have to treat, then, in the large majority of cases of winter cough, is a combination of some or all of the conditions which I have already discussed, viz. :

" 1. Dilated right heart.

" 2. Collapsed lung.

" 3. Emphysema.

" 4. Thickened naso-pulmonary mucous membrane, with narrowing of the air-passages.

" 5. Catarrh of the naso-pulmonary mucous membrane, of greater or less extent.

" 6. An undue susceptibility of the naso-pulmonary mucous tract.



“7. Local and general conditions favouring or producing susceptibility of the mucous membrane.

“8. Cough and short breath, symptoms of the existence of the conditions already enumerated.

“9. Dilated tubes.

“10. Disintegration of lung tissue.

#### IMPORTANCE OF ERADICATING BRONCHIAL COMPLAINTS.

“It is, then—and this is the important practical deduction—to the gradual creeping down of catarrh from the nose to the throat, from the throat to the bronchi, and from the larger bronchi to the smaller ramifications, and to the greater and greater difficulty of eradicating the disease as it gets deeper and deeper, that our special attention must be directed. Thus we see the importance of leaving no means untried which can give a chance of radically and permanently removing every lasting trace of bronchitis, before we let a patient consider himself safely cured, in every attack of this disease that comes before us for treatment.

“We must not be satisfied because the cough is better, or even if it has left; for we have seen that this may be the case under favourable atmospheric influences, and yet enough disease lurk behind to bring it back with the first return of an irritating cause. We must only be satisfied when, by all our methods of examining and testing the respiratory powers, we cannot detect a lingering trace of disease in the bronchial mucous membrane; and even then we have to consider by what means we can maintain this condition till it has become habitual. I must remind you here of the important position which

neglect of bronchitis and obstructed bronchial tubes holds in the category of causes of emphysema."

#### HEREDITARY TENDENCY AND DIATHETIC STATES.

"A careful consideration of all the evidence on the subject leads me to the opinion that there is a tendency in bronchitis to be transmitted from parent to offspring, and to affect collaterals, and that this may be explained, as I have already suggested, by the fact that various diathetic states, known to be hereditary and to run in families, predispose to affections of the naso-pulmonary mucous membrane. If, then, the tendency to bronchitis and catarrh is hereditary, and if catarrh and bronchitis are common causes of emphysema, it is easy to see how naturally the mistake has arisen of concluding that emphysema itself is hereditary."

#### DIATHESIS—INTERDEPENDENCE OF SKIN COMPLAINTS AND CHEST COMPLAINTS—MINERAL WATERS, BATHS, ETC.

"Let me not omit to speak of that very important class of influences which I placed seventh on our list of the things we have to treat in winter cough—'Those general conditions favouring or producing morbid susceptibility of the mucous membrane of the air passages.'

"When treating of the *hereditary transmission* of a tendency to naso-pulmonary catarrh, I pointed out that this was due to the hereditary nature of certain diathetic states; and when treating in detail of the properties of mucous membranes, and the various modes in which they are affected, I pointed out that flushing,

congestion, irritation, increased secretion, and *all the phenomena of catarrh may be brought about by the presence in the blood of such impurities as proceed from mal-assimilation, imperfect digestion, rheumatic, gouty, syphilitic, typhoid, rubeoloid, and other poisons*; and I pointed out the analogy in this respect between affections of the mucous membranes and affections of the skin. I need not, therefore, go over this ground again; but it is in relation to treatment that these facts assume the greatest importance. We may as well expect,—to cure a skin disease dependent upon mal-assimilation by external applications alone, to cure an attack of gout by poulticing the great toe, or to remove a syphilitic affection of the eye by the application of simple lotions,—as to effectually treat an affection of the naso-pulmonary mucous membrane, dependent upon similar general causes, by remedies directed only to the catarrhal condition of the membrane. We may, indeed, in one case and in the other, produce temporary local amendment by such local and narrow-minded treatment, but we know that the local disease will recur again and again so long as we neglect the general condition.

“When I say, then, that the first thing in treatment is to provide against fresh attacks of catarrh, I must place *first on the list of means of such prevention*—the treatment of whatever general conditions we can discover which, acting from within, may favour or produce morbid susceptibility of the mucous membrane of the air passages.

“Everything that we learn from physiology and pathology, all that we know of etiology, confirmed by our deepest clinical experience, conspires to hold up THE TREATMENT OF DIATHESIS AS THE SECRET OF THERAPEUTIC SUCCESS. . . .

“Colchicum, sulphur, and arsenic\* too, which act so beneficially upon some affections of the skin, are often of great use in treating the respiratory mucous membrane.

“Where there is a tendency to alternation of affections of the skin and of the naso-pulmonary mucous tract—which may often be observed, especially in the rheumatic, gouty, syphilitic, and strumous diatheses—whatever constitutional treatment has proved efficacious in the removal of the skin complaint, *without exciting its metastasis to internal parts*, is likely to assist in the treatment of the pulmonary affections.

But it very often happens that in curing a skin complaint asthmatic and bronchitic symptoms are excited; and this shows that the treatment is not efficacious in the sense of attacking the diathetic defect, and the remedies which have this tendency should, of course, be carefully avoided. In some chronic cases, the only way to keep the lungs safe is to maintain the skin disease; and an attempt should be made to do this in some part of the body out of sight, and where it will be of least inconvenience to the patient; on the whole, the shins and calves are the best. I have known many cases, especially in the old, in which the patients remained free from cough and dyspnoea only so long as they were content to put up with a patch of eczema on each leg. When this is found to be the case, and the patient is not too advanced in years, the proper plan of proceeding is to make a mild and insidious *attack on the diathesis*, which should be persevered in steadily till the constitutional condition is radically changed. *This is*

\* Some of the most popular cigarettes for the relief of asthmatic spasm owe their efficacy chiefly to the presence of arsenic.

*generally best done by mineral waters, baths and change of climate."*

#### CAUSES OF COLDS, COUGHS, AND SHORT BREATHING.

"Having then attended to *the diathesis*, let us proceed to protect the air passages from causes of irritation *acting from without*.

"What these causes are we have already learnt from the analysis of the cases which I have reported.

"Fresh colds were the only causes which brought on or aggravated the cough in 72 per cent. of the cases, and the most frequent and potent causes of these 'fresh colds,' as stated by the patients themselves, were—

"1. Sudden changes of temperature in 21 per cent.

"2. Fogs and damp air in 19 per cent.

"3. Draughts of cold air in 16 per cent.

"4. Cold winds in 10 per cent.

"5. Getting wet in 14 per cent.

"6. Wet feet in 17 per cent.

"And we find the same list of causes of fresh colds as the potent provokers of short breathing. This important list is no less striking for the powers of evil which it is shown to possess, than for the remarkable simplicity of the evil powers themselves."

#### COUNTER IRRITATION.

"There is no class of complaints in which *counter irritation* gives such unquestionable and unqualified relief as in affections of the respiratory tract of mucous membrane. The relief to the oppressive dyspnoea and to the irritability of the tubes long narrowed by thickened lining, which speedily occurs under the influence of decided counter irritation, is delightful to witness."



## HOT FOMENTATIONS, POULTICING BY STEAM, ETC.

"In some stages of congestion of mucous membranes especially where the tumidity is great and there is much reluctance to secrete freely, *hot fomentations*, applied as near the affected part as possible give great relief, and, by promoting secretion, put the membrane in a better position to be benefited by other treatment. It is surprising how much good may be done in a short time by repeated hot fomentations and poultices to the back and sides of the neck in affections of the nasal-pharyngeal and laryngeal mucous membrane." ("On Winter Cough," etc., first edition, 1866. In the third edition, 1875, I added the following note.)

"Since the above was written I have had the satisfaction of introducing to the profession, in a paper 'On Poulticing by Steam,' a means of applying external heat, either dry or moist, in a manner offering especial advantages in the treatment of chest diseases; where, if marked good is to be done, it is necessary to keep up a considerable, wide-spread, equable temperature, for a long time, and to avoid oppressing the patient and interfering with respiration by heavy applications."

In the paper above referred to I quoted the following passage from a paper which I read to the Abernethian Society of St. Bartholomew's Hospital, Feb. 10, 1853, "*On a new means of applying External Heat and of Maintaining the Temperature of External Applications*," the means first suggested being bags of hot water, which were changed in 1874 for steam applications:—

"We may, then, thus briefly express the rationale of warm applications in removing inflammation:—By multiplying the points towards which the current of

the circulation is attracted, the force of the stream is diverted from the original focus, and carried in so many different directions, that finally all distinct centres of attraction and stagnation are lost and merged into one equal and accelerated flow of blood, during which the circulation in the part is enabled to recover its natural balance; but it is necessary to the successful termination of these changes that the new centres shall be set up, not only within the focus of the original disease, but also at sufficient distances from this to be beyond the site of turgid vessels.

“It has been seen that as the inflammation process advances, the blood flows more and more slowly within the original focus, until, in one vessel after another, it becomes motionless. In proportion as this stagnation spreads and becomes more complete, the amount of effusion and of damage to the tissues increases, and the prospect of a cure by resolution disappears. It is this condition, therefore, that we anxiously hasten to prevent and to remove. But if at this eventful stage of the disease we apply to the affected part a hot poultice of such small size that it only covers the ‘inflammation region,’ and of a temperature high enough to exercise any decided influence, the effect can be no other than the aggravation of the existing mischief by still further promoting the flow of blood towards the first centre of disease, and its accumulation within the original focus. . . .

“To return to the primary object, viz., the removal of inflammation by resolution. The conditions which appear to me to be essential to the efficient application of local heat with this intention may be thus summed up :—

“(a.) The heat should be *extensively* applied, not confined to the inflamed part, but extending also to the surrounding tissues.

“(b.) The heat should be *equally* applied. *There should be no point in the application at which the temperature culminates.*

“(c.) The heat should be *persistent*; the application should be so contrived that the temperature may be kept up for a considerable time.

“(d.) The poultice or dressing should *not require frequent removal*, for it is often essential to the success of the treatment that the part shall remain at rest.

“(e.) The *heat should be moderate*. The application should be of such a kind that it may not be necessary to apply it at a higher temperature than is consistent with the integrity of the tissues with which it comes in contact and with the objects of treatment.”

INHALATIONS :—VAPOURS—SPRAYS OR ATOMISED  
FLUIDS—FUMES.

“I have already shown, when analysing the reported cases under the head of ‘Colds and Coughs,’ that of all the cases of Winter Cough, the cough left in summer weather in 45 per cent., and the short breathing was relieved in summer weather in 29 per cent.; and we found this relief to short breathing and to cough was really due to the removal of the irritability and thickening of the naso-pulmonary mucous membrane, under the influence of *warm soothing inhalations in the form of summer air*. These are very important facts to bear in mind with relation to treatment, not only as indicating the importance of wearing respirators, to which I have

already referred, but as pointing to the use of *inhalations* as a means of restoring the mucous membrane to a healthy condition. Inhalations may consist of *fumes*, *vapours*, or *atomised fluids* (pulverised fluids or spray).

“My own experience of atomised fluids, except as a means of applying lotions to the nares and fauces, and for stopping pulmonary hæmorrhage, is not very satisfactory. I object to their use as a general rule for affections below the glottis, in which it is necessary to allow the patients to respire during the operation.

“They have the great disadvantage of conveying too large a quantity of *cold moisture* into the air passages, and are thus apt to produce all the evils of severe damp and fog. . . . (This objection is, to a certain extent, removed by more recent spray producers, in which the spray can be used warm. See Boudant’s Observations, p. 90.)

“Fumes and vapours have not this objection, and are among the most valuable of our means of acting upon the naso-pulmonary mucous membrane.

“Fumes of carbolic acid are extremely useful as a means of diminishing excessive purulent expectoration, and of removing the foetor of discharges from the lungs of those in whom disintegration of lung substance is taking place.

“Much better results would be obtained by all these topical applications if we could secure their more frequent repetition—if, in fact, we could apply them to the naso-pulmonary mucous membrane as persistently as we apply a lotion to a skin disease; and the object should be to do this to the fullest extent possible under the circumstances.

"The materials which I principally use to mediate the vapour are as follows:—

"1. Compound tincture of benzine. 2. Tincture of iodine. 3. Carbolic acid. 4. Creosote. 5. Spirits of camphor. 6. Spirits of chloroform. 7. Spirits of ether. 8. Juice of eonium. 9. Chloride of ammonium fumes (Felton's inhaler). 10. Liq. ammoniæ, or aromatic spirit of ammonia. 11. Tincture of myrrh. 12. Tincture of lobelia. 13. Tincture of stramonium. 14. Acetic acid. 15. Turpentine in its various forms."

Dr. Sydney Ringer and Dr. W. Murrell (see "Dr. Dobell's Reports," 1877) have used inhalations of ipecacuanha wine as a spray, with considerable success in winter cough and bronchial asthma, the patients' ages varying from forty-five to seventy-two years; and of twenty-five cases in which it was tried, all but one derived considerable benefit. In a few days the dyspnoea was greatly improved, and the cough and expectoration markedly decreased. In one case the progress was tardy, but there was evident temporary improvement after each inhalation. . . . An ordinary spray producer may be used, and as a rule the patient will bear at first about twenty squeezes of the spray without nausea, becoming more tolerant afterwards. The patient should stop the nose with his fingers, and inspire deeply, trying to avoid arching the tongue. The inhalation should be used daily at first, in bad cases two or three times daily; later, every other day, and even with still more extended intervals. In cold weather the wine should be warmed. In using the inhalation it is advisable to dilute the wine at first.



## TREATMENT OF POST-NASAL CATARRH.

“I must not forget to mention the treatment of post-nasal catarrh. Although at first sight a very trifling complaint, post-nasal catarrh is unquestionably very troublesome to cure, and is very apt to return.

“The difficulty is mainly due (1) to the awkwardness of applying topical remedies to the parts principally affected;\* (2), to the almost invariable existence of a diathetic cause; and (3) to the length of time that the complaint has usually existed before the patient comes under treatment. As in all affections of the naso-pulmonary mucous membrane, the first point is to make out the nature of the existing *morbid constitutional state*, and to apply appropriate diathetic treatment for its removal. But unfortunately this alone will not be sufficient; for the local affection will seldom yield without some topical applications, and it is in settling the form of this local treatment that I have found the greatest trouble. After trying a great number of applications in the form of spray, injection, gargle, lotion, inhalation, snuff, and lozenge, I have come to the conclusion that the best for the majority of cases is the combination of:—

“1. A medicated injection. 2. A medicated snuff.  
3. A medicated lozenge. 4. A rubefacient liniment.”

HYGIENE.—SHUTTING UP AND NON-SHUTTING UP SYSTEMS;  
MEANS OF TREATMENT FOR THE NASO-PULMONARY TRACT, ETC.

“Before leaving this subject of sudden transitions of temperature I must not forget to speak of sleeping

\* Since this was written I have contrived a portable nasal douche which overcomes many difficulties.

rooms. It is quite astonishing what follies are committed with regard to the temperature of sleeping rooms. On what possible grounds people justify the sudden transition *from a hot sitting room* to a wretchedly *cold bedroom*, which may not have had a fire in it for weeks or months, it is impossible to say; but it is quite certain that the absurd neglect of proper warming in bedrooms is a fruitful source of all forms of catarrh. . . .

"Such then are the principal means by which I would attempt to defeat the fickleness of climate, and to prevent the recurrence of those attacks of catarrh which keep up and aggravate the disease of the mucous membrane.

"And you will probably have observed that they all assume that the patient suffering from *winter cough* is to lead an active and an out-of-door life, not to be confined to his bedroom or his sitting-room, or even to his house.

"This is a point in the treatment which I consider of very great importance.

"Shut up your patient month after month, and perhaps winter after winter, in warm rooms, with little exercise, and you need not be surprised if you add fatty degeneration to his emphysematous air cells, fatty degeneration to his heart, the muscular strength of which is so important in keeping up his pulmonary circulation; biliary congestion to his liver, already disposed to be overcharged with blood, fat to his omentum, to impede the action of his diaphragm, so essential to his easy respiration, fat to his diaphragm itself, dyspepsia to his digestive organs, the vigour of which is so important in keeping up healthy nutrition in his tissues; in fact, if

you adopt the 'shutting up system' you need not be surprised if, after a dreary hypochondriacal life, your patient should become prematurely old, and die of apoplexy, paralysis, or dropsy.

"But when we have taken all these precautions, when we have taught the patient how to prevent fresh colds, when we have altered those general conditions of his system which predispose to his complaint, and provided him with the means of avoiding the recurrence of catarrh, *there is still much left for us to do*, and which we can do successfully, to promote the recovery of a normal condition in the naso-pulmonary mucous membrane.

"The principal agents in such treatment are :—

"1. Medicines introduced into the stomach.

"2. Medicines introduced into the air tubes by inhalation.

"3. Counter irritants.

"4. Change of climate."

#### SUMMER AND WINTER TREATMENT.

"I wish to draw your attention to a very important practical point, about which there is apt to be great misapprehension, viz., the season of the year in which it is most necessary to pursue treatment for the radical cure of a winter cough—*it is not in the winter, but in the summer. . . .*

"We must only be satisfied when by all our methods of examining and testing the respiratory organs we cannot detect a lingering trace of disease, and when after this we have instructed our patient by what means he can best maintain this restored condition till it has become *habitual*.

"It is in the summer that this part of the treatment can be best commenced, and, if possible, it must be carried out through the succeeding winter. We cannot consider our cure complete till a winter has been passed through without cough or short breath.

"It is then that we should fall back upon that 'great gun,' change of climate. I have reserved it till the end of these lectures, as in practice I reserve it till the end of the treatment, because I am convinced that this is the time when, as good generals, we should bring it into action. When we have conducted our patient safely through the first winter in which we are consulted, and guided him through the succeeding summer; when we have done all that is possible to restore a healthy condition of his respiratory organs, and brought him to the middle of autumn with no cough and no short breath; when he begins to look at the approaching winter with dread, lest his enemy should return and call for a renewal of his last winter's regime; when he is tired of restrictions, and turns sick at the thought of goloshes, water-proofs, respirators, physies, inhalations, and all the rest; when even his gratitude to his physician is beginning to be overbalanced by the longing to forget every reminder of an invalid's life: then is the time, in my opinion, to send our patient for the winter months to some delightful climate, *where he may continue his summer liberty without risk and substantiate his cure* by a prolonged freedom from catarrh, and by the invigorating influence upon his general health of an active out-of-door life."

SELECTIONS FROM THE SECOND EDITION OF  
"LOSS OF WEIGHT, ETC."

PULMONARY CONSUMPTION—DESTRUCTIVE LUNG DISEASE WITH  
CONSTITUTIONAL DECLINE.

In considering the treatment of Lung Diseases it is important to recognise the following facts:—

"1. It is found that, in a large number of cases, constitutional decline precedes local disease by an unequivocal interval—constituting Class I.

"2. In a certain number of cases, local disease precedes constitutional decline by an unequivocal interval—constituting Class II.

"3. These two classes must be considered as absolutely distinct throughout.

. . . . .

"A new constitutional disease of special character may be set up by the local disease in Class II., and the local disease of Class I. is competent to set up a constitutional disease of the same special character as in Class II. In both cases this disease is due to the absorption of the products of the local disease."

ARSENIC.

"From what has already been said of the importance of all means of arresting waste of tissue, and also of the assistance to be obtained from antiseptics it will be readily understood that *I attach great value to arsenic* in the treatment of loss of weight and lung disease. I have always thought that (probably in consequence of the form in which it was written) too little



attention was given by the profession to a little book published in 1857, by Dr. John Gardner, 'Editor of Liebig's Letters and Lectures on Organic Chemistry,' in which he says:—'The great remedy upon which, after much experience of its effects, I rely to arrest the formation of tubercle, is the arseniate of soda, the mildest and most manageable form of this agent. It should be administered in such a manner as just to tinge the system, and this may be done securely and safely, inasmuch as the symptoms of its action are definite and immediately become obvious. We have not in the whole list of our *Materia Medica* a safer or more manageable remedy, and I have had sufficient experience to recommend it to the adoption of the profession. But I respectfully warn all who would make trial of it, to satisfy themselves of the exact nature of the case, to be sure it is tubercular consumption they are treating, before pronouncing for or against it. Most cases of tubercular consumption require to be carefully watched, and brought under the influence of this remedy several times at intervals, and the result will, I feel confident, justify my assertion of its being the most powerful, if not the only means of arresting tubercle.' When he goes on to say:—'In many cases a single grain divided into forty-eight doses, and one given every six hours, has been sufficient to arrest the disease and change the whole aspect of the patient,' he spoils his case by excess of zeal, and tempts one to recall the axiom, 'What proves too much proves nothing.'

"But Dr. Gardner was not the first by a great many to recommend arsenical preparations in the treatment of phthisis—although he says with regard to the use of arseniate of soda, 'I have only met with one author who

has even hinted at this application of it before I first recommended it.'

"At the Royal Chest Hospital, a mixture of liq. arsenialis ℥ ij. to ℥ iij., ext. cinchonæ liq. ℥ x. to ℥ xx. in an ounce of water twice a day after food, was largely used by me as a tonic in the treatment of phthisis; and both in hospital and private practice I have had great and increasing reason to be satisfied with the effects of arsenical preparations. Old cases which have done well are constantly turning up, in which I find that a combination of arsenic and bark, prescribed by me some years before, has been the favourite '*tonic*' to which the patient has returned again and again with confidence and advantage. One caution is important with regard to the administration of arsenic, viz., not to begin it while there is any marked catarrh of the naso-pulmonary or the alimentary mucous tract.

"Of late years the waters of La Bourboule, which contain arseniate of soda,\* have been used by me with satisfactory results both as spray and as a diet drink; the water being taken with an equal quantity of hot milk for breakfast and tea, or mixed with wine at luncheon and dinner.

"From my experience of arsenical treatment, I am not at all surprised to read in the '*Boston Med. and Surg. Journ.*,' June 27, 1878, the eulogy† on the arsenical water of Pozzuoli, by Dr. Horatio R. Storer, of Newport, R. I., President of the Gynæcological Society of Boston. Dr. Storer says, in concluding:—

"'In the case observed by me, the arsenical water of

\* And much resemble those of Mont Dore.

† Based upon their effects upon his own son.

the Solfatara was used in conjunction with the respiration of its atmosphere, and may have increased the action of the latter, while its own, like that also of the atmosphere, may have been enhanced by the sulphuric acid that it contains. In many of the successful Italian cases, however, the inhalation of the arsenical atmosphere has alone been employed, thus narrowing the question to its ultimate merits. In either case, however, the treatment would chiefly have been constitutional, in accordance with Dr. Henry Bennet's well-expressed formula:—'The most advanced minds in the profession more and more recognise the fact that the local manifestations of chronic chest diseases, tubercular or inflammatory, are mere epiphenomena. They require treatment, of course, but their treatment is of secondary importance when compared with the treatment of the constitutional state of the patient, which is at the root of the mischief. . . . The whole question will be still further investigated, from an English stand-point, by Dr. Cerio.'

#### ANTISEPTIC TREATMENT.

"I may fairly add in this place that it was under the dictation of this train of ideas (explained in the work) that I was led to insist upon the importance of local antiseptic treatment by means of inhalations, and to make it a leading feature of my treatment of phthisis at the Royal Chest Hospital and in private practice, long before its importance was so generally accepted as it may be said to be at the present day—long before *Antiseptic Surgery* had opened the mind of the profession to the importance of antiseptic medicine.

“ It must not be forgotten that, when tubereulisation and tuberculosis have been stopped, when the functions of the pancreas, liver, and stomach have been restored, and the intestinal mucous membrane brought back to a normal condition, there may yet remain *tuberculemia*. From time to time, fresh blood-poisoning may occur from the absorption of deposited tubercle; and, if there is any considerable quantity deposited, this chronic blood-poisoning may become a tedious and dangerous disease. The absorbed tubercle may be again deposited and again absorbed, and thus keep up a ceaseless repetition of morbid changes, somewhat analogous to those witnessed in pyæmia. Treatment directed to the blood-poisoning will, therefore, be imperatively called for in most cases of tuberculosis which have advanced to the stage of tubereulisation.

“ It should be our constant object by the use of antiseptics to stay decomposition, and to disinfect the products of decomposition *in situ* wherever they can be found and reached. It is with this view that I have always made inhalations of creosote, carbolic acid, or turpentine a leading and essential part of my treatment of destructive lung disease. (See also an Article on Disinfection in the 6th edition of ‘Diet and Regimen,’ &c.)

“ As I may not find a better opportunity, I must not omit to mention in this context the pains which my talented and zealous friend, Dr. Clifford Allbutt, of Leeds, is taking to test the *antiseptic properties of climate*, and his interesting articles in the ‘Lancet’ of October 20 and 27, 1877, and June 8, 1878. In the latter article he says:—‘For many years I have held that the majority of phthisical patients die of septicæmia, and that the arrest of this daily re-poisoning is a primary object of

treatment. To reach, cleanse, and dress ulcers of the lungs by surgical methods seems impossible, and the effects of antiseptic inhalations are disappointing; if, however, there be *an antiseptic climate*, we may hope to counteract this secondary blood-poisoning, by sending our patients to live in it.’”

M. Vaucher (“*Jour. de Méd. et de Chir. Prat.*,” 1875.) says “Phthysical patients are often recommended the Davos station. . . . During all the medical season, the ground is covered with from one to two metres of snow. . . . The patients are directed to perform some inspiratory exercises. . . . They also follow a hydrotherapeutic treatment, and their alimentation is tonic and respiratory, so that they generally get stouter. The season is over in spring, when the climate becomes damp and unfavourable. Phthysical subjects who present ulcers of the larynx or of the trachea, and who, consequently, *must not breathe dry air*, should by no means be sent to Davos, or to any of the Alpine stations. M. Vaucher believes that Mont Dore would be well fitted for a winter establishment like Davos.” (See also “*Dr. Dobell’s Reports on Diseases of the Chest*,” Vol. I., 1875; Vol. II., 1876.)

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In explanation of the absence, in the foregoing pages, of more special details for the treatment of *individual cases*, I may quote the following important passage from M. Boudant’s work:—

“It has now been shown that the medical matériel of Mont Dore is reduced as far as possible to Mineral Waters, employed under the most varied forms. But concerning the finesse of their application—the doses,



the temperatures, the order and duration of the thermal practice, &c., the idiosyncrasies, and the special prescriptions—it is impossible to enter into all these details.

“The diseases against which these waters are directed so easily vary and become complicated with new symptoms, and the properties of the waters are so active, that their use ought to demand a constant surveillance. There is no thermal station where the patients are more indulged in this respect. Once under treatment they no longer belong to themselves; and we do not doubt that this continued and traditional solieitude contributes enormously to the success obtained.”

These remarks of M. Boudant are entirely in accord with those with which I closed the second edition of my work on “Loss of Weight, Blood-spitting, and Lung Disease”:—“Associated with the discussion of these conditions will be found the *principles and means* of treatment. My reasons for abstaining from dietating the details of treatment for individual cases, I have often stated in other places, and in the following passage of my work on ‘Winter Cough’ (1866), I especially emphasised my opinion on this point in the following words:—‘I do not believe in the possibility of adapting the exact details of treatment to partieular cases, without taking into consideration and carefully balaneing all the eircumstances of each case to an extent which it is impossible to do in lectures and books, or in any other way, *if the patient is not before us*. I will not pretend, therefore, to direct the exact cases in which this or that remedy, or combination of remedies, is to be used. To do this is, in my opinion, very much like the folly sometimes perpetrated by governments, of issuing from their offices at home orders for the exact mode in which their generals

abroad shall conduct their battles. It has always ended in defeat."

Those who have carefully considered the matters which we have now discussed will, I feel sure, agree with me in the statement which I made when first introducing the Mont Dore cure to my medical *confrères*, in August, 1880, viz., "It must never be forgotten that it is a very *definite and potent course of emphatically medical treatment*, and will require the same skill and judgment on the part of the medical advisers at Bournemouth as is exercised at Mont Dore, in the Auvergne; otherwise it will not have the same success." (See p. 20.)

The exact course to be followed by each patient should be distinctly mapped out by the physician, after having made a most careful examination of the case in all its bearings, and he should revise this course from time to time, and make such modifications in it as the effects obtained and other circumstances may dictate. (See pp. 2, 3.)

In order to secure such a definite and systematic mode of procedure on the part of both the physician and the patient as I believe to be essential to success, I advise the invariable use of the FORM OF PRESCRIPTION PAPER which I have given at p. 179.

Finally, it must be observed that there is nothing in the Mont Dore course to preclude the addition of other means of treatment, should they be required.

DR. DOBELL'S FORM OF PRESCRIPTION PAPER FOR  
"THE MONT DORE CURE."

<i>Name of Patient</i>						
<i>Reference to Case Book</i>				<i>Date</i>		
BATHS, DOUCHES, INHALATIONS, ASPIRATIONS, IRRIGATIONS, GARGLES.	Form and Mode of Application.	Medica- tion.	Tempera- ture.	Duration.	Frequency.	Number.
Baths of Water:— Whole bath. Half bath. Foot bath.						
Baths of Vapour.						
Douches of Water : Ascending. Descending. To what parts.						
Douches of Vapour : To what parts.						
Inhalations of Vapour.						
Aspirations of Pulverised Water.						
Nasal Irrigations.						
Gargles.						
WATER FOR DRINKING. — Name of Spring.	Pure or Mixed.	Tempera- ture.	Quantity per Day.	Doses.	Hours for Drinking.	For how long.
Diet and Regimen						
Medicines and other Auxiliary Treatment to be ordered overleaf.						

\* \* \* This paper to be shown to the Physician, at each visit, for Revision.



# DESCRIPTIVE CATALOGUE

OF

## OTHER WORKS

BY

DR. DOBELL.

---

"We should be at a loss to name any one in Great Britain whose writings . . . repay earnest study more richly than those of Dr. Dobell. Whatever comes from his pen has that happy combination of personal clinical observation with the 'traditions of learning,' which Lord Verulam laid down as the highest quality of medical teaching."—*Medical and Surgical Reporter*, Philadelphia.

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"Teem with knowledge, and overflow with an interest to which it would be difficult to attach an overrated value. The whole profession is indebted to Dr. Dobell."—*Australian Medical Journal*.

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LONDON.

—  
1881.



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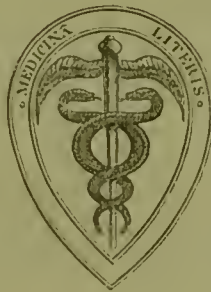
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